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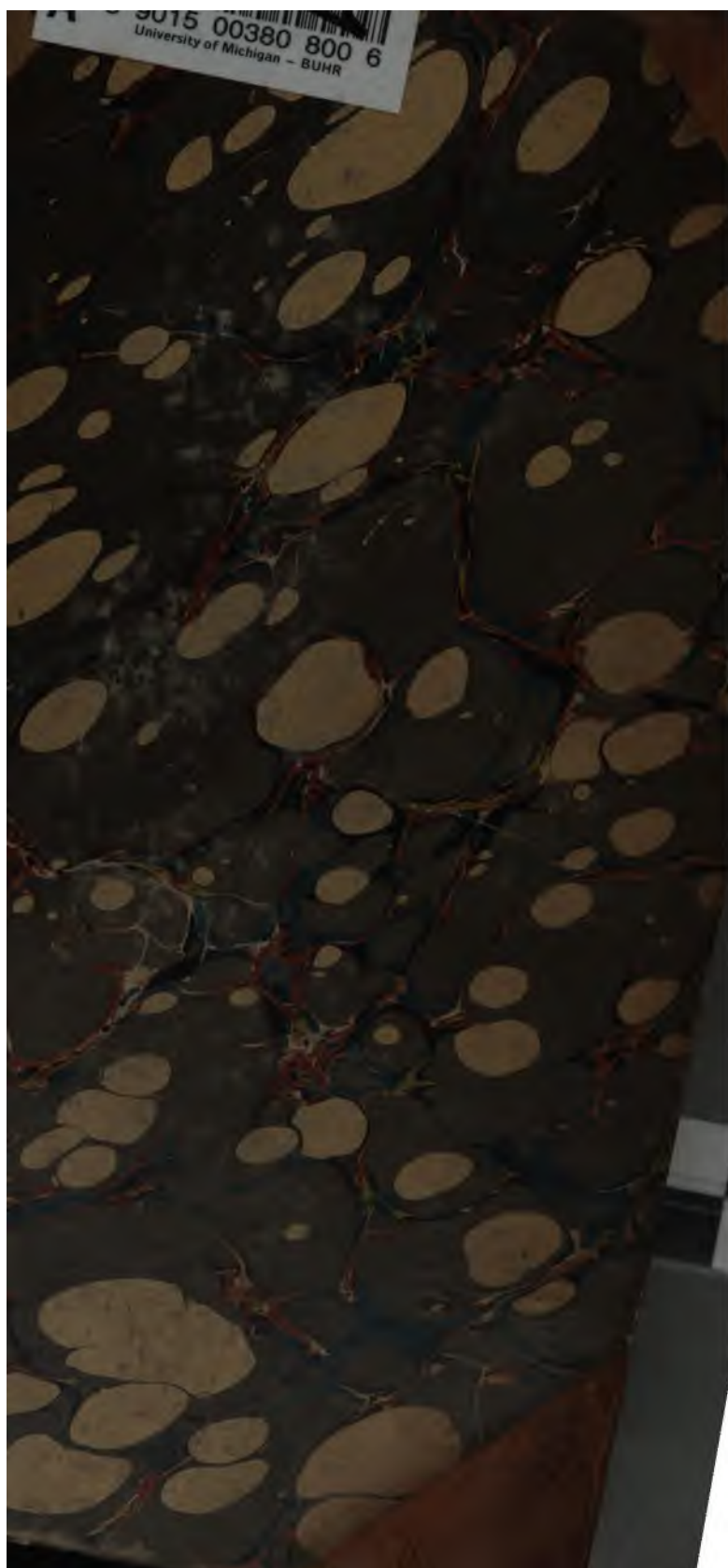
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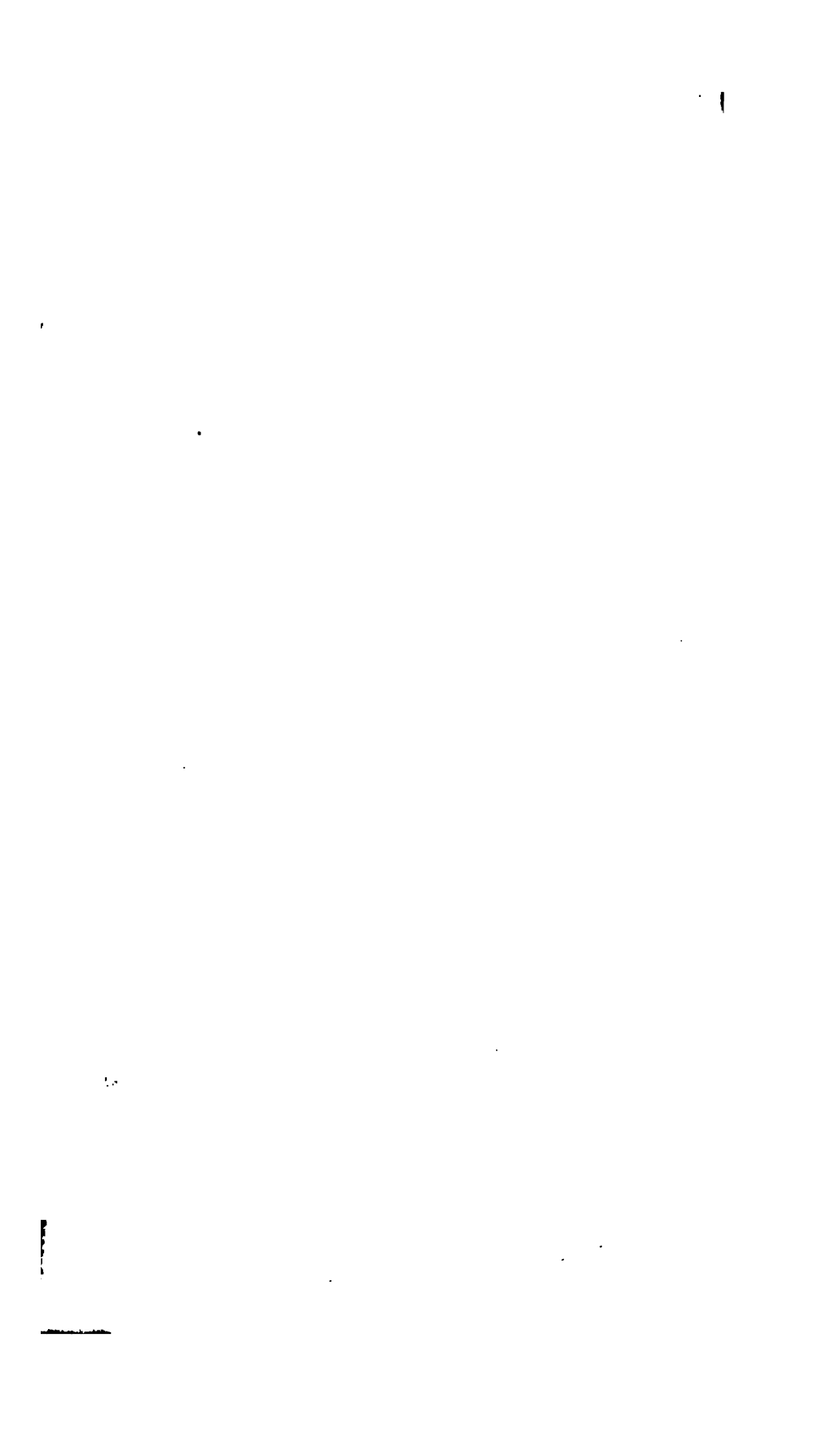
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THE  
MEDICO-CHIRURGICAL  
REVIEW,  
AND  
JOURNAL

OF  
PRACTICAL MEDICINE.

(*NEW SERIES.*)

VOLUME THIRTY-SEVEN,

[1st of APRIL to 30th of SEPTEMBER,]

1842.

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VOL. XVII. of DECENNIAL SERIES.

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EDITED

By JAMES JOHNSON, M.D.

PHYSICIAN EXTRAORDINARY TO THE LATE KING,

AND

HENRY JAMES JOHNSON, Esq.,

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# CONTENTS

OF THE

## MEDICO-CHIRURGICAL REVIEW,

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### REVIEWS.

#### I.

<b>The Transactions of the Provincial Medical and Surgical Association, Vol. X. . . . .</b>	<b>1</b>
1. The retrospective Address . . . . .	1
A. Dr. Foville's latest Researches on the Brain . . . . .	1
B. Summary of Experiments on the Motions and Sounds of the Heart . . . . .	2
C. Inefficiency of Remedies for Fever . . . . .	2
D. Application for "Pitting" in Small-pox . . . . .	3
E. Detection of Sugar and Albumen in the Urine . . . . .	3
G. Effects of Iodine . . . . .	4
2. Case of a Pin passing from the Appendix Vermiformis into the Bladder. By WILLIAM D. KINGDON, M.D. . . . .	5
3. Case of Tumour developed in the midst of the Cauda Equina. By W. W. FISHER, M.D. . . . .	7
4. Medical Topography of Exeter . . . . .	8
5. Further Observations on the Variolæ Vaccinæ. By ROBERT CEELEY, Esq. . . . .	13

#### II.

<b>The Nervous System and its Functions. By HERBERT MAYO, F.R.S. . . . .</b>	<b>16</b>
1. Laws of the Nervous System relating to Sensation and Voluntary Motion . . . . .	17
A. Conditions necessary for Consciousness . . . . .	18
B. Decussation of the Optic Nerves—Hypothesis of its Object . . . . .	20
C. The Reflex Action of the Nervous System . . . . .	21
2. Functions of the Brain . . . . .	26
3. The Muscular Sense . . . . .	34

#### III.

<b>Pulmonary Consumption; its Prevention and Cure established on new Views of the Pathology of the Disease. By HENRY GILBERT, M.R.C.S. L. . . . .</b>	<b>41</b>
1. Statistics of Consumption . . . . .	41
2. Pathology of Consumption . . . . .	46
3. Diagnosis of Consumption . . . . .	50
4. Prevention of Phthisis . . . . .	51

#### IV.

<b>Memoir of the late James Hope, M.D., Physician to St. George's Hospital. By Mrs. Hope. Edited by KLEIN GRANT, M.D. &amp;c. . . . .</b>	<b>53</b>
---	-----------

#### V.

<b>A Treatise on the Nature, Causes, and Treatment of Erysipelas. By THOMAS NUNNELEY, Esq. . . . .</b>	<b>59</b>
--	-----------

#### VI.

<b>Statistical Reports of the Health of the Navy, for the Years 1830—36 inclusive East India Command . . . . .</b>	<b>65</b>
--	-----------

#### VII.

<b>Recherches Cliniques sur le Diagnostic, l'Étiologie, la Curabilité, &amp;c. de la pre- mière Période de la Phthisie Pulmonaire . . . . .</b>	<b>68</b>
<b>Clinical Researches on the Diagnosis, Etiology, Curability, &amp;c. of the First Stage of Pulmonary Phthisis. By JULES FOURNET, M.D. . . . .</b>	<b>70</b>
1. Diagnostic Signs afforded by the Constitution . . . . .	70

## CONTENTS.

2. On Hereditary Transmission . . . . .	71
3. Influence of Diseases on Pulmonary Phthisis . . . . .	73
4. Diagnostic Signs afforded by Auscultation . . . . .	75
VIII.	
Criminal Jurisprudence considered in relation to Mental Organization. By Mr. B. SAMPSON . . . . .	79
IX.	
<i>La Clinique des Hôpitaux des Enfants, et Revus Retrospective, Medico-Chirurgicale et Hygienique</i> . . . . .	86
The Clinical Practice of the Hospitals for Children, and Retrospective Review, Medico-Chirurgical and Hygienic . . . . .	
1. Case of Laryngo-Tracheotomy for Croup, in the Sick Children's Hospital. By M. A. Contour . . . . .	87
2. Case of Bright's Disease after Scarlatina . . . . .	91
3. Dr. Baron on Pleurisy in Children . . . . .	93
4. Therapeutics of Children from Two to Fifteen Years of Age. By M. A. Becquerel . . . . .	104
A. Physiological Conditions . . . . .	104
B. Pathological Conditions . . . . .	104
C. Antiphlogistic Medication . . . . .	106
X.	
An Inquiry into the Nature and Causes of Epilepsy; with the Function of the Spleen and Thyroid Body. By JOHN JACKSON, M.R.C.S. . . . .	110
XI.	
The Education of Mothers of Families; or the Civilization of the Human Race by Women. Translated from the French of Aimé-Martin, M.D. By ED. LEE, Esq. . . . .	113
1. Sense of Infinity—A faculty of the Soul . . . . .	113
2. The Education of Mothers . . . . .	115
XII.	
<i>Traité Pratique sur les Maladies des Organes Génito-Uriinaires. Par le Docteur CIVIALE</i> . . . . .	116
A Practical Treatise on the Diseases of the Genito-Urinary Organs. By Dr. CIVIALE . . . . .	
1. General Pathological Observations . . . . .	117
2. Permanent Stricture of the Urethra and its Consequences . . . . .	118
XIII.	
The Climate of the United States, and its Endemic Influences, &c. By SAMUEL FORRY, M.D. . . . .	135
1. Pulmonary Diseases . . . . .	135
2. Diarrhoea and Dysentery . . . . .	136
XIV.	
The Madras Quarterly Medical Journal for 1841 . . . . .	137
1. On the Morbid Effects of High Temperature . . . . .	139
2. Observations on the Hill Fevers of the Southern Peninsula of India. By Dr. Heyne . . . . .	141

## PERISCOPE.

## Bibliographical Notices.

1. Observations on the Admission of Medical Pupils to the Wards of Bethlem Hospital, for the purpose of Studying Mental Diseases. By John Webster, M.D. . . . .	147
2. First and Second Reports of the Medical Missionary Society in China . . . . .	149
Tic Douloureux, or Neuralgia Facialis, &c. their Seat, Nature, and Cause, with Cases. By R. H. Allnatt, M.D. . . . .	151
Medical Reform—Sir Jas. Clarke's Letter to Sir J. Graham on Medical Reform . . . . .	153
Plan of Medical Reform, &c. By Richard Carmichael, Esq. M.R.I.A. . . . .	153
A Practical Treatise on the Cure of Diseases by Water. By James Wilson, M.D. . . . .	156
The Anatomy of the Urinary Bladder and Perinæum of the Male, &c. &c. By Alexander Monro, M.D. &c. . . . .	157

## CONTENTS.

33

### Spirit of the Foreign Periodicals, &c.

1. M. Dumas's Lectures on Organic Chemistry	161
1. Source of the Component Materials of Vegetable and Animal Substances	161
2. Generation and Influence of Ammonia	162
3. Action of Plants on Carbonic Acid, &c.	163
4. Fermentative Processes in Living Bodies	163
5. Respiration, Animal Heat, and Digestion	163
6. M. Dumas's Theory of Digestion	164
2. Another Blow to Broussaism in France	165
3. On the Use and Abuse of Corsets	167
4. Notice of M. Vidal's Treatise on Surgery	169
1. Rashness of Modern Surgeons	170
2. Surgical Diagnosis	170
3. Operations en deux Temps	171
4. Treatment of Gun-shot Wounds	171
5. The Diet in Cases of Severe Wounds	171
6. Torsion of Arteries	172
7. Remarks on Lithotomy	172
8. Amputation of Gangrened Limbs	174
9. Hospital Gangrene	175
5. M. Sedillot on Surgical Instruction	175
6. Condemnation of Myotomy in Spinal Deformities	179
7. M. Serre on the Influence of the Operation for Cataract on one Eye, on the Sight of the other	180
8. M. Serre on the Influence of Inflammation in one Eye, on the Restoration of Sight in the other	182
9. Review of the Ophthalmological Literature of 1840 and 1841	183
1. Fistula Lachrymalis	183
2. Wound of the Orbit; Rupture of the Optic Nerve	184
3. Trichiasis	185
4. Ptosis	185
5. Mechanical Lesions of the Eye	186
6. Wounds of the Supra-ciliary Region	186
7. Purulent Ophthalmia of Armies	187
8. Purulent Ophthalmia of New-born Infants	188
9. Scrofulous Ophthalmia	188
10. Syphilitic Ophthalmia	189
11. Opacities of the Cornea	190
12. Staphyloma	191
13. Formation of an Artificial Pupil	191
14. Cataract	192
15. Amaurosis	193
16. Strabismus	194
17. Various Applications of Ocular Myotomy	195
10. Surgical Treatment of Stammering well known to the Ancients	198
11. Obliquity of the Nose cured by Operation	201
12. M. Stromeyer on Spasm of the Thumb in Writing	201
13. Report of Vaccination in France during 1840.	205
14. Oxydes of Iron as Counter-poisons to Arsenic	208

### Clinical Review, and Hospital Reports.

#### GUY'S HOSPITAL.

1. Guy's Hospital Reports. No. XIV. April, 1842.	209
1. Cases illustrative of the Diagnosis of Disease of the Kidney	209
2. Medico-legal Report of a Case of Infanticide; with additional Remarks on the Fœtal Lungs. By Alfred S Taylor	215
3. Observations on Pelvic Tumours obstructing Parturition. With Cases. By John C. Lever	219

## CONTENTS.

4. Two cases of Injury to the Head, followed by Symptoms of Compression, &c. By Edward Cock	229
5. Observations on Urinary Concretions and Deposits; with an Account of the Calculi in the Museum of Guy's Hospital. By Golding Bird, M.D.	232
6. On the Location of Pulmonary Phthisis, and its Relation to Diagnosis. By H. Marshall Hughes, M.D.	236
7. On the Proceeding to be adopted in a Case of Injured Intestine, from a Blow upon a Hernial Sac. By C. Aston Key	238
8. Case of Irideremia, or Absence of Iris; with Observations. By John Frederick France	242
9. Case of enormously-distended Gall-Bladder. Communicated by R. G. Babington, M.D.	243
2. Report of Cases at the Chester General Infirmary, during the years 1838-9 and 1840. By T. B. Peacock, Esq.	245

### MEATH INFIRMARY.

3. Malignant Disease of the Eyeball successfully removed by Extirpation. By Dr. Byron	251
---	-----

### NEW-YORK HOSPITAL.

4. On Polypous Tumours of the Nasal Fosse. By J. Watson, M.D.	252
1. Seats of the Disease	253
2. Diseases likely to be confounded with Polypus	253
3. Varieties of Polypi	254
5. Lunatic Asylum of Aberdeen. Report for 1840	256

### Spirit of the British and American Periodicals, &c.

1. Extinction of Human Races	259
2. Physic in China and Diet in India	263
3. Contraction of the Flexor Muscles of the Thumb, or "Scrivener's Spasms," cured by Division	264
4. Iodine Injections for Hydrocele	264
5. Formula for the Infusion of Chirayta	265
6. Pharmacy in Germany	265
7. Blistering Plaister	268
8. Fine Words in Medicine	268
9. Poor-Law Medical Relief—New Regulations of the Poor-Law Commissioners	269
10. Iodine for the Dropsy after Scarlet Fever	274
11. Scirrhus of the Pancreas	274
12. Preparations of Iron	275
13. Counter-Irritants	276
14. Summary of the Mortality Tables of London for the Year 1841	277
15. Ox-gall	278
16. Dorton Chalybeate	286
17. Some Cases of Sudden Death from Hæmorrhage of the Lungs in Children. By Cathcart Lees, M.B.	287

### Extra-Limites.

1. A Statistical Account of the Principal Diseases which have occurred amongst the Children admitted into the Royal Military Asylum, Chelsea, &c. By Samuel Geo. Lawrence	287
1. Chronological Remarks and Observations	287
2. Concluding Remarks	3

### Miscellaneous.

1. Sympathetic Paralysis	3
2. Twelfth Annual Report of the Belfast District Lunatic Asylum. March, 1842.	
1. Restraint of Patients	
3. Hanwell Lunatic Asylum	
BIBLIOGRAPHICAL RECORD	

### Notice to Correspondents, &c.

Society for Improving the Condition of the Insane	
Montgomery on Pregnancy.	

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**Medico-Chirurgical Review,**

No. LXXIII.

[NO. 33 OF A DECENNIAL SERIES.]

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APRIL 1, TO JULY 1, 1842.

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THE TRANSACTIONS OF THE PROVINCIAL MEDICAL AND SURGICAL ASSOCIATION. Vol. X. Churchill, 1842.

THE volume before us is inferior in size, at all events, if not in interest, to most of its predecessors. Its contents are—I. The Retrospective Address delivered at the Ninth Anniversary Meeting of the Provincial Medical and Surgical Association, held at York, August 4th and 5th, 1841. By Robert J. N. Streeten, M. D.—II. On the Medical Topography of Exeter and the Neighbourhood, being a Sketch of the Geology, Climate, Natural Productions, and Statistics of that District. By Thomas Shapter, M. D.—III. Observations on the Climate of Herefordshire compared with that of the Neighbourhood of London, with Metereological Tables, &c. By Lieut.-Colonel Philip Yorke.—IV. Medical Topography of Shrewsbury and its Neighbourhood. By T. Ogier Ward, M. D.—V. Case of a Pin passing from the Appendix Vermiformis into the Bladder. By William Dashwood Kingdon, M. D.—VI. Case of Tumour developed in the midst of the Cauda Equina. By W. W. Fisher, M. D.—VII. Further Observations on the Variolæ Vaccinæ. By Robert Ceely, Esq.—VIII. Report of Cases at the Chester General Infirmary during the Years 1838, 1839, and 1840. By Thomas Beavill Peacock, Esq.

THE RETROSPECTIVE ADDRESS.

This has been compiled with care, and is executed with discrimination. We shall select one or two points from it.

*Dr. Foville's latest Researches on the Brain.*—The inferences drawn by Dr. Foville from his later researches are, first, that the fibrous parts of the brain are conductors, some from without to within, others from within to without; that these conducting parts may be distinguished into afferentes and efferentes; that the distinct course of both the one and the other may be demonstrated; that the first are inserted especially into the circumference of the grey substance, and the second into its internal surface; that the afferent conductors are those fibres which are intermediate between the posterior parts of the spinal marrow, the optic and olfactory nerves, and the circumference of the convolutions, and that the efferent



are those parts connecting the internal surface of the convolutions with the anterior pyramids: second, that the grey substance of the convolutions, intermediate between the two preceding orders of fibrous parts, seems to be the material substance through the instrumentality of which the will directs the movements of the body.

*Summary of Experiments on the Motions and Sounds of the Heart.*—Dr. Clendinning has drawn up a report of the Committees of the British Association for the Advancement of Science. The report contains the conclusions deducible from the two series of experiments and observations instituted by these Committees both on the motions and sounds of the heart. Among the most important of these in a practical point of view are, that the order of the motions of the auricles and ventricles is by continuous succession, rather than by alternation of action, the auricles contracting abruptly after the rest or pause, and the ventricles immediately after the auricles; that the normal systolic action of the auricles is energetic and almost instantaneous, and that the normal auricular diastole is gradual, continuous, and wholly passive; that the systole of the ventricles is gradual in its development; that the arterial diastole or pulse perceptibly succeeds to the cardiac systole; that the first sound of the heart depends partly on the abrupt closure of the aurico-ventricular valves, but is mainly owing to cardiac muscular tension alone; that the auricular systole is attended by an intrinsic sound resembling that of the ventricles, but more short, obtuse, and feeble, often difficult of detection, owing to its being absorbed in the louder ventricular systolic sound immediately succeeding; that the sounds of friction in pericarditis may, when well marked, be expected to be double, and sometimes triple, or more; that the sounds of the structurally healthy heart are liable to modifications by alterations in the condition of the fluids; and that the suction influence on the venous circulation, attributed to inspiration by various writers, is well founded.

*Inefficiency of Remedies for Fever.*—Some remarks on the treatment of continued fever have been made by Dr. Eager, of Manchester, and a comparison drawn between the effects of emollients, antiphlogistics, and purgatives. The conclusion at which Dr. Eager arrives is, that in the milder forms, all kinds of treatment, when not too exciting, have proved more or less successful, and that, as in the more severe forms patients have recovered under the most opposite methods, it is probable the means adopted have had little influence, and that nature alone acted. It should perhaps be stated that many of Dr. Eager's cases were observed in Paris and the rest in Manchester. In all the fatal cases examined after death, one only excepted, the follicular affection was present.

*Scarlatina Encephalica.*—An essay of considerable practical importance on the Nature and Treatment of Scarlet Fever connected with Cerebral Symptoms has been contributed by Dr. T. F. Cornell. In the cases to which the observations of the author refer, and which he proposes to term scarlatina encephalica, depletive measures, notwithstanding an apparent imperative demand for them on account of the severity of the head symp-

toms, seem to have proved fatally injurious, while under a contrary mode of treatment, the exhibition of wine and other stimulants, many of the cases were conducted to a favourable termination.

*Application for "Pitting" in Small-Pox.*—The application of mercurial plaster in variola to the face and other parts, with the view of preventing the formation of the pustules, has been successful in many cases treated by M. Chomel and others. A paper on this subject has been read by Dr. J. F. Olliffe before the Medical Society of Paris. The plasters should be applied while the eruption is in the papular stage; the formation of pustules is thereby prevented and the progress of the eruption checked, the formation of cicatrices does not take place, and the disease is stated to be conducted to a safe termination. The action of the mercurial is thought by Dr. Olliffe to be specific. Sulphur ointment has been proposed as a substitute for this remedy by Dr. Midaveine, of Ghent, and is stated to have proved equally efficacious. The last observation is, we dare say, true enough. Probably any grease would do as well as the sulphur ointment or mercurial plaster.

*Diagnosis of Hydrops Pericardii.*—Mr. Mackenzie has pointed out that, in cases where hydrops pericardii is combined with co-existing effusion into the pleura, the patients are unable to bear the horizontal position, but that where the fluid is confined to the pericardium the horizontal position is preferred, probably from the weight being thus taken from off the diaphragm.

*Diagnosis of Nervous Palpitation.*—The nervous palpitation of young females often simulates patency of the aorta. Dr. Corrigan points out as diagnostic marks that in the permanent patency of the aorta "*the bruit in the carotid is synchronous with the diastole of the arteries*"; whereas in the hysteric or chlorotic affection "*it is not confined to the duration of the diastole of the artery, and is very frequently a continuous, uninterrupted, long, rumbling sound.*"

We have misgivings on both these last points of diagnosis.

*Aneurysm of the Pulmonary Artery.*—This was a case related by Mr. Fearn, of Derby, in which, on examination, after fatal hæmoptysis, "a distinctly defined *aneurysmal sac*, as large as a nutmeg," was observed jutting into a tuberculous excavation on the upper lobe of the left lung. "The parietes of the sac were thin, and it did not contain any fibrinous layers; a vessel, the size of a small crow-quill, leading from a considerable trunk of the pulmonary artery, was distinctly traceable into the sac."

*Detection of Sugar and Albumen in the Urine.*—An ingenious and simple apparatus has been devised by M. Biot for detecting the presence of sugar in diabetic urine upon optical principles. The method consists in ascertaining the action of the fluid suspected to contain sugar on polarized light, and we are assured that in this manner the smallest quantity of sugar may be instantly detected in the urine of a diabetic patient, and the

progress of the disease and the effect of treatment thus ascertained with the utmost facility. The same principle may be applied also to the detection of albumen, the action on the polarized ray being in this case in a contrary direction, and M. Donné proposes also to determine by the instrument of M. Biot the presence of animal matters, not albuminous, in the urine from the negative results afforded.

*Urine a Test of Pregnancy, Chlorosis, and Phthisis.*—The urine has been examined in pregnancy and in various states of disease by M. Donné, who has been able to determine, from the microscopic character of the salts deposited, with great probability, if not with absolute certainty, the existence of pregnancy. The urine in chlorosis he found to be destitute of all traces of iron, although in health a certain quantity is always present; and in phthisis also the urine presents some peculiar qualities which are considered by M. Donné so characteristic as to afford a means of diagnosis in doubtful cases.

Very like a whale.

*Injections into the Uterus.*—A warm discussion has been carried on in France, respecting the danger to be apprehended from injections into the uterus in various diseases of that organ. M. Hourmann found that an injection thrown up into the uterine cavity in a case of leucorrhœa, produced immediate pain in the left iliac region, and was followed by symptoms of metro-peritonitis, for which the most energetic treatment was required. From experiments afterwards performed, it was ascertained that injections with an arterial syringe might be made to pass into the fallopian tubes. Similar occurrences have also been reported by M. Leroy d'Etiolles, and M. Guillemin, of Rombas. The subject has been also investigated by M. Vidal de Cassis, and M. Leroy d' Etiolles; and discussions have taken place upon it in the Medical Society of Paris.

We cannot but think these injections hazardous.

*Effects of Iodine.*—A paper on the circumstances which favour the therapeutic action of iodine has been drawn up by Dr. Mojsisovits, from the examination of upwards of eight hundred cases, in which the remedy was employed. The iodide of potassium and iodide and biniodide of mercury are considered to be the most useful preparations; the tincture of iodine the most uncertain and injurious. The activity of the remedy is said to be greatest in clear and dry weather, and when the epidemic constitution is inflammatory and catarrhal. On the other hand, when small-pox, puerperal fever, and diarrhœa are prevalent, its action is almost null. Bread, potatoes, rice, oatmeal, and all substances which contain fecula or starch, are said to be incompatible. Iodine causes as critical effects, salivation and a military eruption or rash resembling scarlatina. Salt-water baths contribute much to favour the action of the iodine.

All we can say is, that if bread, potatoes and gruel can neutralize the action of iodine, there is plenty of it wasted in this country. In spite of these dangerous aliments, we have seen it of service. But to proceed.

The diseases in which it was found most efficacious were certain chronic syphilitic affections, and especially such as are the combined result of

syphilis and mercury, and various scrofulous degenerations. The injurious effects sometimes arising from the employment of the iodide of potassium and the iodide of starch have been pointed out by Dr. Adair Lawrie, of Glasgow. The mucous membranes of the eyes and air-passages are said to be especially liable to become affected. In one instance the employment of the medicine was followed by urgent dyspnœa and loss of voice; in another, by excruciating head-ache, acute pain in the eyes, profuse secretion of tears, and intense pain in the side, (nostrils?) with swelling and continuous discharge of clear serous fluid; in a third, by fatal dyspnœa; in a fourth, by acute congestion of the conjunctiva, pain of chest, hoarseness, cough, and dyspnœa; in a fifth, by profuse papular eruption, which disappeared on the iodine being omitted, and re-appeared on its being again resumed, followed by sore throat, acute dyspnœa, and hoarseness, with fatal result, the mucuous membrane of the upper part of the larynx, rima glottidis, and epiglottis being found œdematous on inspection; in a sixth, by intense head-ache, slight salivation, and sore throat; and in a seventh, by severe head-ache. Dr. Lawrie has never seen these preparations act as irritants to the mucous membrane of the intestinal tube, nor has he ever observed them to produce emaciation or atrophy of the mammæ or testicles.

**CASE OF A PIN PASSING FROM THE APPENDIX VERMIFORMIS INTO THE BLADDER.** By *William D. Kingdon*, M. D., Physician to the Exeter Dispensary.

J. P. aged 7. In the early part of January, 1836, he awoke in the night time, complaining of great difficulty of micturition, not being able to pass more than two or three drops of urine at a time. In this state he continued, suffering little pain, and that only from the retention of urine, for upwards of a week; when one morning, making greater efforts than usual, he perceived something of a whitish colour moving about at the orifice of the urethra, and taking hold of it, drew out a female worm (*ascaris lumbricoides*), which was followed by an immediate relief from the foregoing symptoms. No farther notice was taken of the circumstance until twelve or thirteen months afterwards, when the dysuria recurred and lasted nine or ten days, at the expiration of which term he had severe pain at the neck of the bladder, and said that there was something crawling in his penis; on examination, his mother discovered another worm, and drew it out as in the former instance, and with the same relief. In six months afterwards the same symptoms returned, but subsided in a few days on the evacuation of another worm. On the 4th of October, 1838, he complained of pain in the perinæum and at the extremity of the penis, which continued night and day for more than a week, when it entirely subsided on the passage of another worm. He remained free from pain until January 11th, 1839, when the same distressing symptoms again recurred with aggravated severity, and lasted for two or three days: during this period he was unable to emit any urine, and it was for the first time thought necessary to call in the aid of a medical practitioner, who, on introducing the catheter, drew off a large quantity of water; in the course of the same afternoon

a worm crept from the urethra, and, as before, the little sufferer experienced immediate relief. The pain however recurred much more frequently, and the urine was obliged to be drawn off repeatedly. The boy's appetite began to fail, and he lost flesh rapidly. Various professional gentlemen were consulted, but he received no benefit, and gradually became worse.

On the 8th of February, 1839, he came under Dr. Kingdon's care in the Exeter Dispensary. He then complained of occasional pain in the perinæum and at the extremity of the penis; to make use of his own words, "Like as if there was a worm there, wanting to poke his way out." There was at times difficulty in passing his urine, but not requiring the use of the catheter. Under the use of sedative medicines, he was much relieved, but on the 12th of April, the symptoms returned with more severity than ever. The catheter was introduced, and afforded instant relief; shortly afterwards a worm made its way through the urethra, as on a previous occasion. Up to this period the boy had always voided his urine through the natural passage; but subsequently *per anum*. The pain now recurred two or three times in the course of the day, but was alleviated as soon as he could evacuate the urine from the bladder; the pain was likewise lessened on pressing the perinæum with his hand; occasionally ~~every~~ day would pass without any uneasy symptom. In the beginning of May, he was sounded, but no calculus was found. He became much worse, and frequently complained of the worm attempting to force its way out, and when in great pain a quantity of purulent matter oozed from the urethra. On the 20th of October he became blind; the pulse averaged 120; the countenance was anxious; the appetite for food very small, and that only for liquids. Very little urine was voided for the space of a fortnight, and his pain was more severe than ever; for this he took one-eighth of a grain of belladonna every five or six hours, and with considerable temporary relief. On the 24th his sight returned, and he became so much freer from pain that his medicines were omitted. On the 9th of November he was entirely free from pain, and any urine secreted was voided through the natural passage. Two worms were brought away by stool, and a third was found in the bed next morning. Still he became gradually weaker, and on the 15th died.

*Examination of the Body.*—Emaciation. The whole intestinal canal discoloured and presenting traces of inflammatory action, but the colon and rectum much more so than the small intestines; mesenteric glands enlarged; the *appendix vermiformis*, instead of occupying its natural situation, had descended into the pelvis, and about an inch from its termination was firmly united to the superior and lateral portion of the bladder a little above the junction of the ureter with this organ; the bladder itself was smaller than natural, and firmly contracted at its lower part upon a hard substance, which, on laying open the cavity, proved to be a calculus of the triple phosphate form, measuring in length one inch and six-tenths, and in circumference two inches and nine-tenths; the parietes of the bladder were much thickened, and on laying them open about half an ounce of purulent matter escaped; the calculus was firmly pressed upon the internal orifice of the urethra, preventing almost entirely the flow of urine

in that direction; the mucous coat of the bladder was ulcerated in two places, and on the mesial side of the opening of the right ureter, and a little above it, were two fistulous openings, the septum between the two being very slight, communicating with the interior of the *appendix vermiformis*; both ureters were much enlarged and inflamed, and both kidneys larger than natural, and so completely filled with pus that scarcely a healthy portion was discernible.

The calculus being carefully divided, displayed in its centre a large pin, which, as Dr. Kingdon justly remarks, satisfactorily accounts for the singular appearances above detailed. The poor boy must have swallowed the pin, which, after traversing the small intestines, formed a lodgment in the *appendix vermiformis*; here the irritation caused by it must have given rise to inflammation and adhesion of the process to the exterior of the bladder, and subsequently, by ulceration, to the passage of the pin into the urinary bladder, where it formed the nucleus of the calculus discovered after death, though not detected during life. The fistulous communication with the bladder will likewise very readily account for the voiding of the urine from the anus, the natural orifice being closed by the calculus; and also for the passage of the worms through the urethra on the several occasions mentioned.

A curious case.

CASE OF TUMOUR DEVELOPED IN THE MIDST OF THE CAUDA EQUINA.

By W. W. Fisher, M. D. Downing Professor of Physic, Cambridge.

Taylor, a tailor, aged 38, intemperate, first seen, January, 1840. In 1837, he injured, whilst riding, the lower part of the loins by the back part of the saddle, and from that period he began to suffer from pain in the lumbar and sacral regions, which was attributed to rheumatism; the pain gradually became more violent, and extended down the legs, which began to swell. He was obliged to give up work in June, 1839, and became bed-ridden in the September of the same year; he could not however lie down, but rested on his hands and knees. He was then unable to move either his loins or lower extremities; but he had the free use of neck, shoulders, and arms. The pain, which had formerly been chiefly confined to the region of the sacrum, was now more particularly felt across the seat, extending from one ischium to the other. There was great numbness throughout the lower extremities; and although no sensation was in the left leg or toes by touch, nevertheless he complained strongly of a feeling of heat in the parts. There was some degree of feeling on touch, left in the right leg. The legs were very œdematous; there were large ulcerations on those parts of the knees on which he rested, yet he did not experience pain from them. He was generally sleepless, but did not suffer from head-ache; his breathing was easy, his pulse undisturbed, and his appetite good. He had difficulty in making water; and his bowels were generally confined, and at times so obstinately constipated as to resist the action of cathartics and purgative injections. An issue had been placed on the region of the sacrum, the discharge from which was thin;

this was rendered of a more purulent character by the use of iron, from which he seemed to derive more benefit than from any other medicament, especially as regarded the making of water. He died in May.

*Examination.*—Back only inspected. The sacrum seemed more protuberant than usual; this appearance however arose from the loins being more depressed. The arches of the dorsal and lumbar vertebræ and the posterior wall of the sacrum were removed; the laminæ of the lumbar vertebræ, as well as their bodies, were partially affected with caries.

Viewed posteriorly, the dura mater appeared to be in its natural state until it reached the extremity of the spinal cord; but from that point to the end of the sacrum it was wanting, so that the mass of tumour was exposed to view. The morbid growth extended more towards the left than the right side of that portion of the spinal canal in which it was situated. The spinal cord was cut across, about the middle of the back, and the inferior portion of it was removed; nearly the whole of the diseased mass came along with it. The cord appeared to be quite sound throughout. The diseased mass had a lobulated form, and was involved in the cauda equina: and although it was traversed by a few of the nerves, nevertheless the greater portion of the latter could be detached from it.

It was difficult to determine the seat of the tumour when examined posteriorly; but anteriorly the dura mater was sound throughout; and the arachnoid membrane, especially at the upper portion of the tumour, could be traced intact between the latter and the dura mater. Here and there processes were observed to pass from the arachnoid to the diseased structure, but they were similar to those met with between the arachnoid and the pia mater in their natural state. The morbid growth presented several traces of vascularity in the centre, and had a scirrhous appearance. The upper portions of the tumour were softer, and were involved in a fine glistening covering; sections of several portions of them showed them to be composed of a grey, semi-transparent, jelly-like substance, infiltrated amidst reticulated tissue, and marked with sanguineous striæ, several of which appeared like true vessels.

Dr. Fisher thinks there can be little doubt that the disease was seated in the pia mater.

#### MEDICAL TOPOGRAPHY OF EXETER.

Dr. STREETEN has communicated a very careful and valuable memoir upon this subject. We shall pick out an observation or a fact here and there that seems instructive.

*Types of Prevalent Disease.*—Within Dr. Streeten's observation the general aspect of disease has partaken of two very separate and distinct characters. During the few years immediately preceding 1828, affections of the serous membranes for the most part prevailed; thus the cases chiefly met with were those of pleuritis, peritonitis, and, amongst children, hydrocephalus, all exhibiting a type of disease requiring the most prompt

and persevering antiphlogistic treatment. Since that period, however, diseases having their origin in the mucous membranes, or else involving them in their course, have been of the most usual occurrence, and these have required a treatment rather mild than heroic; in fact it was early learned that the type of disease was changed, and the method of cure which had been previously requisite was now any thing but applicable.

We fancy that this remarkable tendency of late years, to affections of the mucous membranes has not been limited to Exeter. But to proceed:—In 1825, inflammations of the serous membranes were exceedingly prevalent; peritonitis, in its severest forms, was of the most frequent occurrence; and, amongst children during this year, hydrocephalus was so frequent as really to justify one in styling it an epidemic. During the autumn of 1829, English cholera in its most rapid and urgent forms occurred, and was attended by a very signal mortality. In 1831, there prevailed an influenza of a severe character. 1832 was conspicuous, during the months of July and August, for the prevalence of the malignant cholera. In 1834, there occurred a slighter influenza. In 1836, small-pox; followed, in 1837, by whooping cough, and then by scarlet fever; each of these infantile diseases during this period was very fatal in its consequences. In 1837, influenza again occurred; it was very general, and attended, as was the case throughout England, with a severe and painful series of symptoms; and in the spring of 1838, a peculiar form of spotted fever occurred.

*Fever.*—In Exeter, February is the month the most prone to fever, and August and September are the least so, as is also the case in a lesser degree with the three preceding and two following months; with regard to December it has elsewhere been pointed out why it may not be taken into account. We see therefore that the fine cold bracing weather, which people so usually congratulate themselves upon as being free from fever, is really the weather most liable to it; while the warm and sultry months of summer are those in which it prevails the least. It is not a little remarkable that the year 1827, in which the greatest proportion of fever cases occurred, was one in which the fewest number of deaths took place; while in 1833 and 1834, years in which the proportion of fever was but small, the amount of deaths was above the average. The same observation also holds good, as regards the months; for August and September, which, of all the months are the most fatal, are seen to be the most free from fever; while February, the least fatal, is the most prone to its attacks.

We confess that we are staggered by the assertion, that August and September are the most fatal months. This is not the case elsewhere; and indeed it is irreconcilable with another statement of Dr. Streeten's that "September is by far the healthiest month of the whole year."

*Complications of Fever*—It appears to Dr. S. that, in Exeter, the most frequent complication is with affection of the mucous membranes of the stomach and bowels, then with the viscera of the chest, and more rarely with the cerebrum. In the other and more simple fevers of the district, the chest is the organ most frequently attacked, then the abdomen, and



then the brain. But, in placing cerebral complication so low, he refers to the early stages of fever, and not to any symptomatic disorder of the brain which may supervene towards the fatal close. When the brain is primarily affected, it is generally by congestion, accompanied by low muttering delirium, with coherence when roused; active and violent delirium is comparatively rare. Primary affection of the cerebrum rarely assumes an epidemic character; it occurs more usually in a few cases only, and at the same time that other cases occur which are characterised by difficult and more general complications. When cerebral affection occurs it may however for the most part be observed that not only is it complicated with lesion of other organs, but that most usually the presence of these lesions had been previously manifested. Affection of the chest, as already observed, most frequently occurs in the ordinary simple fevers; it is in fact very rarely that cases of synochus, if not complicated with the more urgent derangements of the chest, are not attended by some short irritating dry cough, which after a day or two passes into a moist one.

Fever, with pulmonic complication, occurs chiefly during the Winter and Spring.

In 1839 and 1840, fever assumed a hæmorrhagic tendency, and many died in consequence of the bloody discharges poured from the bowels, and which no means appeared capable of restraining.

During the last ten years it has occurred twice if not three times that the external mucous surfaces in children, during a scarcely appreciable attack of fever, have shown a great liability to take on an inflammation of a bad character, attended by copious muco-puriform discharges. In 1834, this was peculiarly the case with the female organs of generation; so much so, that if seen without a knowledge of the presence of fever and its epidemic character, suspicion might have been raised that disease had been communicated, attended with violence.

In 1841, there prevailed amongst children a low fever, accompanied with diarrhœa, in which not only the throat, (from which in some cases false membranes have been thrown off,) but the conjunctiva has become inflamed. The eyelids, generally swollen, have with difficulty permitted the state of the ball to be observed; soon the secretion becomes copious, and so tenacious as to almost preclude the possibility of opening the eye. In this way the acrid discharge is pent up; and the little sufferer, in case of life being spared, recovers, with the eye materially injured, if not entirely destroyed.

*Scarlet Fever.*—In 1838, it assumed a peculiarly bad aspect. Though apparently of an inflammatory character, it could bear but little depletion, and the use of purgatives appeared particularly hazardous; under such a course of treatment life seemed to vanish,—so silently and rapidly did the vital powers subside. It appeared, in fact, in the early commencement of this epidemic, that all attempts to counteract its influence were baffled, and that death would ensue in spite of every effort. Latterly Dr. Streeten adopted Dr. Peart's plan of giving ammonia. Under its influence the patients appeared to cool, and express immediate relief,—indeed subsidence of the more urgent symptoms quickly ensued.

Dr. S. mentions a case illustrative of the persistency of the contagion of scarlet fever.

"A young lady had this affection; two months after her most perfect recovery I was consulted as to the safety of her visiting some distant relatives where children were. The assurance was ventured of perfect safety. To my surprise, in two distant houses where these visits were paid, the scarlet fever broke out. There could be traced no other previous cases in either neighbourhood, so that the only conclusion to be arrived at was that the contagious principle had been retained and conveyed by this young lady. This occurred in the Autumn and Winter of 1840."

*Re-vaccination.*—Though, perhaps, we can scarcely go quite so far as Dr. Streeten, we are persuaded there is a great deal of truth in what he says:—"Re-vaccination is often resorted to; I have watched its progress in a great many cases; and where satisfied of a previously efficient vaccination, have never seen it go through a regular progress, or in any way present a vesicle from which lymph ought to be taken. The conviction therefore presses itself upon me that there is no other use in re-vaccination than as a test of the regularity of the previous vesicle. In this respect it appears to me to be eminently useful, and by no means to be neglected where the slightest doubt is entertained. From what I have seen of re-vaccination, I should, however, be inclined to place no confidence in it as a test unless there were present very sensible evidence of the specific virus being absorbed, as indicated by the formation of an irregular vesicle, attended by a certain degree of surrounding inflammation. It is too often the practice to insert from a glass into the arm a small quantity of the dried virus, and then, because no effect has followed, to proclaim that the patient resists the infection in consequence of the previous operation. Thus an imperfect attempt not only lulls into a false security, but, by its failure, throws undue discredit upon the protective power of vaccination."

*Diabetes Mellitus and Ph'his.*—"Cases both of diabetes mellitus and insipidus are by no means uncommon. Every case of true diabetes that has come under my observation here has terminated in tubercular consumption. This has been so uniformly the case, that the conviction forces itself upon me that it is essentially a symptom of scrofulous disease, and that the kidney is made to be an emunctory of these matters, otherwise colliquatively discharged by the skin."

*Scrofulous Glands.*—Dr. Streeten speaks highly of the ioduret of lead in these cases. But possibly, he is sanguine, for he thinks that true scirrhus of the mamma has been cured "in more than one instance" that he has witnessed by iodine.

*Epilepsy* has in many instances been much benefited, and in some few entirely relieved, by a sustained exhibition of the valerian and hydrocyanic acid, together with the daily use of some slight tonic aperient, as rhubarb combined with soda. The effects of this treatment have been very striking.

*Mercury and Phthisis.*—"Three cases of mental delusion, in connexion with consumption, and after free salivation by mercury, have occurred to my observation, with so much singular coincidence, that I am induced not only to refer to them here, but to style them phthisis, complicated with mercurial irritation. In each the patients presented the usual character of the incipient stage of phthisis; but superadded to this was an impression that their whole system was impregnated with mercury, which in two cases had been taken for syphilitic affection, and in the third for an accidental attack of swelled testicle. So strongly rooted was this impression that they maintained they smelled it in their perspirations, tasted it in their saliva, were convinced it was in their secretions, and that to this, and this only, were attributable the unpleasantness of the symptoms they were labouring under. This state of things in each occurred until the symptoms of phthisis became fully developed, which usually they did suddenly; then the delusion subsided, and the patient went through the ordinary course of a very rapid decline." 152.

We quote this passage because we feel assured that even a moderate mercurial course too frequently gives rise to phthisis pulmonalis. And we have seen the same sort of delusion, not carried, perhaps, to such an extent.

*Family Disposition to Peritonitis.*—"In company with my friend, Mr. Webb, I visited a young man in 1833, who was labouring under peritonitis; after an illness of ten days he died. A *post-mortem* examination exhibited the peritoneum in a state of high inflammation, covered by copious effusion of puriform lymph, and with which the folds of the intestines were agglutinated together. Two years subsequently to this I again visited, in company with Mr. Webb, a brother of the former, aged 22, under similar circumstances, and with the like result. On the *post-mortem* examination, so like were the appearances that a drawing of the one would most accurately have described the appearances noticed in the other. We were also given to understand that in a different part of the county another brother had died only a few months previously with symptoms exactly similar; no *post-mortem* examination was made. Each of these cases of peritonitis occurred at a time when the disease was by no means prevalent, so that its occurrence must be entirely attributed to family predisposition." 158.

*"Calculi of the Liver."*—A. B. had long been jaundiced; suffered pain on the right side on pressure, where was evidently a fullness and hardness. He occasionally suffered all the symptoms of the passing of gall-stones; a few days after which there could be discovered in the *scæces* small dark-coloured matters, not unlike caraway seeds. At the examination after death the gall-bladder was seen involved in a mass of scirrhus. The common biliary duct was scarcely pervious enough to admit an ordinary sized pin. The liver itself was large and hard; internally it was gorged with bile, and here and there could be picked out the small caraway-seed-looking particles. These were, without doubt, moulds of the secreting surface of the liver, and apparently consisted of inspissated bile. They are evidently entitled to be called "*calculi of the liver.*" They are about the tenth of an inch in length, and one-sixteenth in width, slightly curved, and kidney shaped, very light, ten weighing only one grain; their surfaces are covered over with ridge-like reticulations.

*Remedy for the Short-jointed Tape-worm.*—Dr. S. recommends the following formula. *R. Cort. radicis punicæ granati* ʒij. *aquæ* ℥ij., *macera*

*per horas xxiv., decoque ad ℞j., adde syrapi zingiberis ℥i.* Two ounces of this to be taken every half hour until the worm is expelled. If the head become dizzy, which is not infrequent after the fourth or fifth dose, it should be discontinued. It is quite necessary that the above should be made of the bark of the root, and not of the rind of the fruit; this latter appears to be totally inert as a vermifuge.

FURTHER OBSERVATIONS ON THE VARIOLÆ VACCINÆ. By  
*Robert Ceely, Esq.*

Mr. Ceely has been again investigating this important subject. He has examined into the disease as it appeared in two dairies, and has made a valuable addition to his previous paper. As we gave at the time a full account of *that*, it will be unnecessary to enter into the details of *this*.

In one of the dairies it was thought (and the evidence is circumstantially given) that the vaccine disease originated in the cows in consequence of their exposure to bedding, &c. infected with small-pox. Two of the milkers contracted, from the cows, the variolæ vaccinæ. From one of these, Joseph Brooks, lymph was taken. The following were its effects.

It was directly transferred to three of his younger brothers, a lad older than himself, and two infants. The primary symptoms in his brothers and the young man, aged 19, were manifest on the seventh day, but were mild. After the appearance of the areolæ, the secondary symptoms were promptly excited, and gradually increased till their decline. There was nothing remarkable in the character of the vesicles till the full development of the areolæ, when they became remarkably broad and flat, spreading outwards, turgid with lymph, bursting their walls, and, like those from which they were derived, followed by sloughs and deep slowly healing ulcerations. In the infants, fine and healthy, with thick compact skins, the usual fretfulness and feverishness appeared on the evening of the sixth or seventh day, remitting in the morning and increasing in the evening, in proportion as the areolæ advanced, and declining with them. As usual, nothing remarkable before the eighth day in the appearance of the vesicles: in one the vesicles burst and sloughed; in the other they remained entire, were fine and satisfactory, leaving characteristic crusts, and moderately deep finely reticulated cicatrices.

In the subsequent transfers of the lymph the effects varied according to circumstances. In infants, with tense thick skins, the vesicles, though active, were perfectly free from inconvenience, yielding fine "tamarind stone" crusts and regular scars. On children and adults, where the skin was thin, vascular, or irritable, upon the full expansion of the areolæ, the vesicles spread out broad and flat, and, yielding to the distending influence of their *diluted* contents, burst and terminated in sloughs, more or less deep followed by a corresponding extent of ulceration; but where the skin was pale and thick, and especially if the patients were also pale and dark in complexion—conditions in every respect most suitable for the use of *new* lymph—then the vesicles were more compact, restricted, bold, and better defined, with proportionately less areola, and often not distinguishable at any period of their course from those induced by ordinary lymph

Here the crusts were of the ordinary size and form, and the cicatrices of the common depth and extent.

The constitutional symptoms varied not less. In many *infants* the *primary* were scarcely noticed; the *secondary*, proportioned to the texture and vascularity of the parts, the local inflammation, and the temperament of the individual. In *children*, as usual, both were more frequently and more early noticed: the *primary*, on the sixth or seventh day; the *secondary*, at an early period, were marked with vomiting diarrhœa, much fever, and occasional delirium. In *adults* the same early indications of constitutional symptoms, though not always, were often evinced; and during the *secondary*, as usual, much general complaint was made, some few keeping their beds a day or two. But the primary and secondary constitutional symptoms were comparatively mild in many individuals of the three classes above-mentioned.

At the expiration of three months several patients were tested with variola, by inoculation, with no other than a trifling fugitive inflammation at the point of insertion, or a small vesicle resembling the modified vaccine in form, size, and course, containing a *limpid adhesive* lymph, raised on an indurated base, and terminating on the eighth or ninth day in a small, hard; blackish brown crust, and unattended throughout its course with any constitutional symptoms.

The only *hitch* is the original contamination of the cows. However possible or likely their contamination by small-pox, it cannot be considered as satisfactorily proved.

Mr. Ceely remarks, we think with justice, that the phenomena of the vaccine disease in the cow are worth attentive study. Many country surgeons, were they well acquainted with them, might render an acceptable service to medicine by carefully conducted observations.

The ages of the cows affected were *two* four-years, and *three* seven-years. Of the three milch cows which remained free from the disease *two* were three-years, and *one* probably four-years old. That they really did escape was obvious enough, as far as careful inspections, from time to time, of the teats and udders could enable us to declare; and the total absence of any symptoms of indisposition removed all doubt of the fact. Now these three milch cows were shewn to have been equally exposed to the same primary cause as the others, and there seems to be little doubt that some cows are more susceptible of the vaccine disease than others, while some would appear not to be susceptible at all.

"The phenomena of the disease were well described by the milkers. The primary or incursive symptoms so slight as scarcely to attract notice, as is most commonly the case; though in two instances—one some years since, the other more recently—there was considerable precursory indisposition. The heat and tenderness of the teats, with the presence of *small hard pimples, deep in the skin*, which gradually increased daily, with their inevitable and obvious concomitants, *for more than a week* before 'blistering' or *acumation*, were not less indicative of the vaccine than the correctness of the observers. At this period—the acme—they notice the constitutional symptoms, developed in all their intensity, and describe them with more than ordinary accuracy and precision; they certainly were more clearly marked than usual. Many contingencies however affect the development of the incursive and secondary symptoms; the chief are the season of the year and the actual condition of the animal, and the quantity and quality

of food. The retraction and expansion of the cheeks is not always noticed by the careless unobserving milker; nor is the drivelling from the mouth. This last sign was so well marked that the proprietor feared the animals were about to be attacked by the aphtha epizootica, (which was then prevailing in the adjoining farms,) where it is one of the first signs noticed, though not actually the first in existence, and depends on positive inflammation and vesication of different parts of the mucous membrane of the mouth. In the vaccine disease, however, this is not the case, at least here, where the disease is generally mild; for no vesicles are observed in the mouth, nor difficulty of mastication. The drivelling appears to be the effect of topical irritation in the seat of the disease—the teats and udder; for it is very well known that such a symptom does attend similar degrees of irritation from other causes and in other parts. The secondary constitutional symptoms were noticed in all the patients, including the sturk, and were proportioned in each to the amount of topical irritation. It was remarked, however, that the appetite seemed very little impaired, notwithstanding the wretched appearance of the animals, during the presence of the constitutional symptoms, and the sudden and notable loss of milk.” 227.

Mr. Ceely remarks that the ulcerative stage of the variolæ vaccinae is also a matter deserving careful study, though difficult.

Vaccine ulcers, he says, are generally distinguishable by a rounded elevation, more or less manifest, of their outer margins, and a circumscribed induration of greater or less extent, of their base, with a proportionate depression in their centres of deeper ulceration, sometimes caused by a slough. But these characters are obviously influenced by several circumstances which must be taken into account when attempting our diagnosis; the principal are—stage of the disease, texture of the tissues, site of the ulcers. It is necessary to know that in the early ulcerative stage of the severer forms of some other vesicles nearly as much induration, &c., is occasionally found, especially if the texture of the tissues is lax, and much mechanical irritation has been inflicted. If we can be positively assured that the above-mentioned diagnostic conditions have existed in any given ulcer for three or four weeks, or even longer, especially if it be removed from severe casualties, we may fairly presume that it is vaccine; and this presumption will be strengthened, if, under the circumstances, the ulcer be small, for such sized and circumstanced ulcers of most other vesicles, being for the most part superficial and sub-epidemic, speedily heal. But as the texture of the parts in which vaccine vesicles appear varies so much, and as their seat is not uniform in depth, and as elevation of the margin and induration of the base and depression of the centres of the consecutive ulcers are sometimes merely questions of degree, (since time or stage is not always determinable,) it is clear that uncertainty in judging of an individual ulcer must now and then happen. Out of this difficulty we often escape by finding a group of characteristic ulcers on the same animal, or a series of animals, clearly infected one from another. And when we have an opportunity of inspecting ten or twelve, to say nothing of thirty or forty subjects, we seldom fail to detect on some of them the elements of a safe and correct diagnosis, as late as the fifth or sixth week. Such condition of parts very rarely occurs in connection with ulcers resulting from other contagious vesicles, except on peculiar subjects, where the subcutaneous cellular tissue has suppurated and sloughed, and the cicatrizing ulcer has a puckered surface and indurated margin. Most

commonly this result is confined to the first subject attacked, which continues ~~also~~ to furnish a succession of milder vesicles for four or five weeks. It must be borne in mind, however, that the vaccine ulcer also is found co-existent with small superficial vesicles or bullæ, both on the teats and the upper, back, and hairy parts of the udder, as in one of the above subjects at Oakley; of the same nature and possessed of the same harmless contents as the vesicles and bullæ which appear, (at the acme, or on and after the decline of the vaccine,) on the face, trunk, and limbs of children in high health, and in a few adults with irritable skins.

The Paper is one which highly merits perusal. Before we quit it, we may be allowed to concur in a recommendation of Mr. Ceely's to study Comparative Pathology. It may throw great light on human diseases, and materially improve their treatment.

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**THE NERVOUS SYSTEM AND ITS FUNCTIONS.** By *Herbert Mayo*,  
F. R. S. Senior Surgeon of the Middlesex Hospital. London,  
Parker, pp. 182. 1842.

MR. MAYO informs us, in an advertisement, that "the present volume owes its existence to the following circumstances. I was applied to in the Autumn to prepare some additional letter-press for a second edition of my Engravings of the Brain; and it occurred to me, that it would be suitable to introduce in it a summary account of the functions of the nervous system, which I accordingly drew up, something in the following form. This publication, however, was for the time abandoned; and I likewise have altered my mind about it, and think it better to accompany the plates with a succinct anatomical explanation only, which will be the plan adopted. But in the mean time the form in which I had cast my survey of the nervous system, and the reflections to which it gave rise, appeared to me, if not to have elicited much that is absolutely new, yet to display what had been before discovered with new distinctness and force, and to give to several points, which I had before only half seen, certainty and importance. I therefore again went over the subject carefully, and re-wrote what I now submit to the judgment of my profession, and of the few who take an interest in physiology out of it." So the work is neither new nor old, a rechauffé of what has appeared before with a pinch here and there of something novel or piquant. This releases us from the task of analysis, and compels us to pick out what may seem worth the process.

A chapter of introductory remarks takes up the question of Life and Mind—the separate existence or not of the latter.

Mr. Mayo has handled, and not, we think very happily, this subject before. His argument, so far as it goes, is comprised in the following passage:—

"Then the essential purpose of vegetable existence may be held to be the sustenance of beings endued with consciousness.

For in the lowest animal a glimmering of sensibility is traced, and, as is nature's wont, by many steps of infinite gradation, manifesting the affinity of her resources, and wonderfully combining variety with uniformity, an uninterrupted progression of improving organization, joined to an enlarging scope of sensibility, instinct, and subordinate bodily powers, extends thence upwards to man. And great as may be the final interval between brute intelligence and human reason, yet so much greater is the affinity than the distance, that no disparate modification of organs is required to be made for man; but all that exists in full development in the human brain is found typified, and to a great degree already unfolded in the animals that come nearest to man.

The true purpose and aim of vitality are thus apparent. Life is a force so contrived and used, as to qualify the materials of the inert world for a temporary union with consciousness;—a means how mind may enter into such relations with matter, that it may have its being and part in physical nature, and its faculties developed, and its capabilities and tendencies drawn out and proved (for whatever ulterior purpose) in subjection to and in harmony with her laws.

As we imagine the Supreme Mind to be ubiquitous, infinite, controlling but uncontrolled by matter, so in contrast with these attributes we conceive the finite mind to be bound down to place, and to be dependent on a certain arrangement of matter for its manifestation, each power displayed as the property of a tissue, each agency as the function of an organ.

These views do not lead to materialism. For one cannot disjoin the physiology of the nervous system from mental philosophy, nor investigate the play of its organs without attending to the mind itself. And if equal consideration is given to the two classes of phenomena, it is impossible (so at least it appears to myself,) to avoid the conviction, that they are essentially independent the one of the other, and belong to distinct essences; and that Ipséity, the consciousness of personal being, is not a mode of material existence, nor physical impenetrability an attribute of that which feels and thinks." 7.

Alas! the stiff neck of materialism will not be bent nor broken by this. And, indeed, argument is useless where absolute confutation can touch neither party. Philosophy, in such a case, must bow to Faith, whose assurances are more positive and more consolatory.

#### LAWS OF THE NERVOUS SYSTEM RELATING TO SENSATION AND VOLUNTARY MOTION.

These Laws form the subject of the first Chapter. The observations of Mr. Mayo are thrown into the form of aphorisms, with a sort of illustrative notes. This saves the trouble of connexion and continuousness, at all events.

*Composition of the Nervous System.*—The nervous system is formed of two dissimilar textures, which are, for the most part, distinguishable by their colour; one being grey, ashen, or cineritous, the other of an opaque white, of the tint termed orange white. The first is principally composed of minute corpuscles. The second, of tubes containing either gelatinous liquid or a definite filamentous structure. When portions of the nervous system, comprising the two textures, have acquired consistence through maceration in alcohol, the grey is found to have a granular fracture, the white to tear into threads, which are bundles of nerve-tubes.



The distinction of colour obtains in mammalia, birds, reptiles, and in the encephalon of fish. It is distinct, too, in the larger invertebral animals.

*Functions of the Grey and White Matters.*—The grey and white textures have determinably different functions. the white that of transmitting or communicating, the grey that of receiving impressions and originating impulses.

The disposition of the two textures is decisively affirmative of this conclusion. The grey matter forms isolated organs. These are united together by tracts of white matter, the filaments or tubes composing which tend directly towards or from masses of grey matter. Where the nervous system has the most ample organic development, as in the brain, the superficies, or expanded terminal part, consists of the grey texture. It may be added that grey nervous matter is considerably more vascular than white,—a fact of itself indicating a higher function.

*Parts or Segments of the Central Organs of the Nervous System.*—In the simplest animals that possess a distinct nervous system there are two or more central masses of nerves, containing grey matter, and nerves of white matter in connexion with them. The highest animals display a repetition of these parts, with some additions. Thus, says Mr. Mayo :—The central organs of the nervous system in vertebral animals consist of similar parts to those which exist in the invertebrata, and of something more ;—of a double cord giving off nerves in pairs to the successive segments of the frame, corresponding with the chain of sensorial nuclei of invertebral animals ; and of new organs superimposed upon its anterior, or upper, or cranial extremity. The double cord may be termed the cranio-spinal cord ; the succession of parts in it originating pairs of nerves, segments or nuclei ; the superimposed organs are the cerebellum and cerebrum.

This repetition of parts and idea of segments is important for the right understanding of the “ reflex actions ” of the nervous system.

*Conditions necessary for Consciousness.*—The spinal cord and medulla oblongata, with the nerves arising from them, are together sufficient to maintain consciousness.

This position is supported by Mr. Lawrence's case of an *acephalous* fœtus, and by the experiments of Magendie, in which he sliced *away* the cerebrum and cerebellum until just anterior to the fifth nerve. The animal, so mutilated continues to be as vividly affected by sounds, smells, tastes, punctures of the face, as if it had experienced no further injury than the loss of blood attending the opening of the cranium. If, for example, you pluck a hair of the whisker, or apply a pungent acid to the nose, it tries with its fore-feet to disembarass itself of the cause of its pain, as if it were un mutilated. Respiration and circulation take place, the movements of the body are not more interfered with, than if the cerebellum alone had been removed. The sensibility of the trunk and limbs has besides suffered no alteration. The animal cries and agitates itself,

endeavours to withdraw and to defend itself, when a toe or the sole of the foot is pinched, equally as when the lips or the nose are injured.

Mr. Mayo remarks, that consciousness in these cases depends on the preservation of the part of the medulla oblongata in which the fifth nerves take their origin. He observes that Magendie drew the inference that, in vertebral animals, the perception of all sensations, except those of sight, takes place in the medulla oblongata. "This inference appears to me unsound in two points. It ascribes, by implication, smelling to the fifth nerve, whereas real olfaction belongs to the first. And, which is the important error, it asserts the seat of perception generally to be the medulla oblongata; whereas the facts prove only that sensation does not take place, unless the nerves of the senses and their nuclei of origin preserve continuity with a certain portion of the medulla oblongata."

After remarking that continuity with the segment of the medulla oblongata, in which the fifth nerves rise, is equally necessary to the maintenance of the functions of parts of the nervous system which are situated above or anteriorly to that segment, and that no part of the nervous system severed from that segment participates in consciousness, Mr. Mayo thus argues the matter:—"I dwell upon this proposition to familiarize the reader with the view alone justly deducible from Magendie's experiments above related. The cessation of a function on the separation of a part of the nervous system from this segment, taken alternatively with the suppression of every function on the separate mutilation of that segment alone, does not prove that that segment was the seat of the first. The integrity of the segment of origin of the fifth may be necessary to the preservation of sensibility in the whole trunk, without its being the seat of sensation. The action of the heart in another way may be necessary to secretion, without the heart being the discerning organ.

It is natural perhaps to suspect that the importance of the segment of the medulla oblongata, where the fifth rises, may be here over-rated; and to surmise that its seeming importance results from its central situation, which renders any considerable mutilation of it impracticable without disturbing in a great degree the communication between the anterior and posterior halves of the nervous system, as well as the origins of the seventh and eighth, which have so much to do with the common manifestations of vitality. But the reader may easily get rid of this doubt by observing the difference between a decapitated frog, where the head has been severed at the anterior part of the medulla oblongata, and the same animal when the next minute portion of the medulla is removed: in the first instance, the animal sits collected on its limbs in an attitude prepared for exertion, and if it is hurt, its body and limbs are prompt to consentaneous motion with the full expression of vitality and consciousness. In the second instance, the animal lies at once, extended, relaxed, nerveless, motionless.

The question is an amusing and rather a seductive one in physiological metaphysics, but it is one that will never be settled. It signifies little whether this particular segment of the medulla oblongata be the organ of consciousness or not. Consciousness is connected with it so indissolubly, that they cannot be handled apart. Destroy it, you destroy conscio-

ness,—leave it, you leave consciousness, just so perfect or impaired as the nerves of sense are left incomplete or maimed connected with it. A figurative expression of Mr. Mayo's is a good one—it is “the dynamic centre of the nervous system.”

Mr. Mayo proceeds:—“Each lateral half of a vertebral animal is separately vitalized. Or the preservation of consciousness in one half is independent of its preservation in the other. Or the continuance of the functions of either lateral half of the cerebro-spinal system depends upon the integrity of the half of the segment of origin of the fifth nerve proper to it.

That is to say, all the modifications of the phenomena of consciousness, which Magendie produced in the preceding experiments upon the whole frame of the vertebral animal, he discovered, may be produced on one side alone, by limiting the mutilation to that side. So destroying the right half of the segment of origin of the fifth, appears to extinguish consciousness on the right side entirely, without in any degree affecting the left. Is it then possible, that by exactly severing in the median plane the two halves of the vitalizing segment, a vertebral animal might be made, temporarily, two separately conscious beings?”

Perhaps Mr. Mayo will try.

*Decussation of the Optic Nerves—Hypothesis of its Object.*—After announcing that the nerves derived from either lateral half of the cranio-spinal cord are distributed to the same side of the frame, and stating that the optic nerves constitute the sole exception to this law, Mr. Mayo goes on to remark, that in all animals with divergent vision there is reason to believe that the optic nerves supply exclusively the opposite eyes. In man, however, for the type of convergent vision, the principle of distribution is different; each optic nerve distributes fasciculi to both eyes. And hereupon Mr. Mayo erects this theory, which, as it is very ingenious, we shall insert.

“Convergent vision is the more perfect function. Now the most sensible spot in the human retina is situated at the optic axis. But this point is situated a little to the outside of the entrance of the optic nerve. Accordingly, it is probable that it is supplied by the fibres which form the outer portion of the optic nerve. But these fasciculi may be traced distinctly backwards, along the outside of the optic tract, to the optic thalamus and corpora geniculata of the same side. The part of the right retina in man, which has the acutest vision, is therefore probably supplied from the right optic tract; the corresponding point in the left retina from the left. And accordingly, so far as the part of the retina situated at the optic axis is concerned, the general law asserted of the distribution of nerves appears to be observed in man in the distribution of the optic.

But if the centre of the right retina, which lies to the right of the entrance of the right optic nerve, is supplied from its right fasciculi, it is probable that the rest of the right portion of the retina is supplied from the same source likewise: and so with the left. And nothing has been ascertained, anatomically, in contradiction of this supposition. Then the greater part of either retina in man probably supplied by the optic nerve of the same side.

But the general direction of this portion of the right retina is towards the left towards the left of the common visual axis of both eyes. Now there is a part of the retina of the left eye, which is turned in the same direction. It is, of course, its inner portion. Are we at liberty to surmise, that that portion of the

left retina derives its supply of nervous filaments from the inner fasciculi of the left optic nerve, which, at all events, enters the eyeball contiguously to it? If this should be proved to be the case, it would follow that the right optic tract supplies the inner portion of the left retina, as well as the outer portion of the right; for from that tract are derived those decussating fasciculi, which form the inner or left fasciculi of the left optic nerve. Then another, and compensating uniformity, in exchange for that obviously disregarded, would be obtained, and those surfaces of both retinæ, which are directed towards one side, or towards one side of the common visual axis, would prove to be supplied from one optic tract alone.

But, further, it would thus happen that the right optic tract would distribute all its fasciculi to retinal surfaces turned towards one side, and that side the left, or more correctly, the left of the common visual axis. Then suppose a transitional series, in which the same principle should be observed, from animals with perfect convergent vision, to others in which a very small part only of either retina admits of being so employed, it would follow that fewer and fewer of the fasciculi of the right optic tract would continue to go to the right eye. As many only would be so distributed as would supply that lessening portion of the right retina which could be turned towards the left of the common visual axis, the greater portion would cross over to the larger portion of the left retina, now looking towards the left. And finally, when in the completion of the series convergent vision should become wholly lost, the whole of the fasciculi of the right nerve would cross over, maintaining the same principle of uniformity, to be distributed to the left eyeball: the left to the right." 33.

However ingenious this may be it must still be remembered that it is made up of probabilities and surmises, whilst the aim and object of the arrangement would seem, in Mr. Mayo's mind, to be chiefly uniformity. For, he says, "if it (his view) is just, the apparent breach of uniformity is only introduced to make room for a more important observance of the same principle; or to allow of the greatest possible uniformity in the anatomical arrangements for two functions so dissimilar as divergent and convergent vision; and even for the occasional partial introduction of the second more perfect function in the ascending series without any external alteration to betray the sudden stop in advance, and the subsequent retreat from it."

*The Reflex Action of the Nervous System.*—Mr. Mayo very ingeniously contrives to excite the impression that he is the author of the "reflex" theory, and that he long ago announced the facts it rests upon. He picks out two passages from former publications of his own, and taking them for text, he constructs the hypothesis in question. Poor Dr. Marshall Hall is not burked altogether, but the only evidence of his existence is contained in the following compassionate squeeze.

"Dr. Marshall Hall has given the good name of reflex function to this circle of impression and action, and has added one or two interesting facts in additional illustration of the principle." 50.

How Dr. Hall will like this physiological thimblery, we will not venture to prophecy. But certainly that gentleman has been strangely dealt with. First of all his views were laughed at or denied. Then, he was told that they were as old as Dr. Whytt. When this was not quite clear, he learnt that he had filched them from Prochaska. Prochaska's writings being

rather mystical, Dr. Hall was let alone, and people *did* begin to think that he really had constructed something. But now comes Mr. Mayo, having lain perdu the while, and smirkingly protests that *he's* the man. Indeed Mr. Mayo is one of the greatest of inventors, for Sir Charles Bell and Dr. Hall have both *cabbaged* his discoveries. His contemporaries, we fear, are too envious to do justice to Mr. Mayo's claims. Whether posterity will be more fair, Mr. Mayo, unfortunately, will never learn.

Yet it seems to us that although Mr. Mayo affects to be the father of the "reflex" system, he is somewhat an unnatural one, and is disposed to mangle his own offspring. Perhaps the "Judgment of Solomon" may explain the case.

"In the entire," says Mr. Mayo, "and living frame, the apparatus for sensation is complete in the sentient organ, the sentient nerve, and the segment of the cranio-spinal cord in which the latter rises, taken conjointly.

Vision, for example, is completed in the retina, optic nerve, and optic tubercle.

The following argument appears to me to establish the above proposition.

That the brain is not necessary for sensation in parts supplied with nerves from the medulla oblongata and spinal marrow, is shown by the case of the acephalous infant above cited, and the corresponding experiments of Magendie.

Then two questions remain. Are the proper cerebral organs (the cerebrum and cerebellum) necessary for smell and vision? and is the medulla oblongata necessary for touch and the muscular sense?

That the proper cerebral organs are not necessary for vision, may be inferred from the want of any correspondence of development in fish and birds, between those organs and the optic tubercles and nerves; while the magnitudes of the optic nerves and tubercles are strictly proportionate.

That the medulla oblongata, again, is not the seat of the sensations of the trunk and limbs (as Magendie concluded it to be), may be deduced from the same consideration.

In birds there is much tactile sensibility in the feet, and the muscular sense is required to be well developed in their legs for maintaining their equilibrium. Now in birds the region of the spinal cord which originates the nerves of the inferior extremities is of great size; and the grey matter of the posterior portion which originates the sentient fasciculi, is so large in quantity, as to appear uncovered, forming the floor of a kind of ventricle opened between the posterior columns of white nervous matter. Here then again the sentient organs, the sentient nerves, and their segments of origin, are in size proportionate to each other. But in the medulla oblongata there is no corresponding amplitude." 51.

If we do not altogether misconceive the argument, this runs totally counter to the reflex theory, and indeed to what Mr. Mayo has himself urged a few pages back. The doctrine of the reflex actions implies the absence of sensation (*ex necessitate*) in the cranio-spinal segment. This argument asserts its presence. It will require much faith to believe that there is really a sensation when the hinder limbs of the frog cut in halves jump to the stimulus applied to them—or when the legs of the paraplegiac are agitated on tickling the soles of the feet. There must then, to parody in the grossest way the whimsical expression of Bichat, be an "insensible sensibility," consciousness of which we are unconscious.

The size of the grey matter at the sight of origin of nerves of important parts must weigh little against more positive considerations and common experience. The reflex actions in such parts must be varied and consider-

able, and require a proportionate organization. Besides, we may conceive that volition and sensation, though attributes of another portion of the nervous system, may still, where much exercised, require correspondingly developed instruments in the nervous cords as well as in their points of communication with the central masses. Just as to give effect to the volition of the smith the muscles of his arm and fore-arm must be brawny.

Mr. Mayo, indeed "goes the whole hog," and applies the same mode and extent of reasoning to volition.

"In the entire and living frame, the segments of origin of the moter nerves, with those nerves, are the whole apparatus requisite for originating and transmitting the voluntary impulse.

The argument in proof of this position is essentially the same as in the preceding instance. The size of the segments of origin is proportionate to the size of the voluntary nerves therein arising; while the size of the medulla oblongata and of the cerebral organs observes no such proportion.

This disparity is most conspicuous in some of the larger birds. The size of the medulla oblongata and of the brain is in these totally incommensurate with that of the segments of the spinal cord originating the nerves of the legs.

The difficulty of admitting this view, to be correct arises from our habitually conceiving volition to be in the brain, through our confounding the will, used synonymously for intention, determination, resolution, with the voluntary effort to move the limbs. A little reflection will show that there is no reason for adhering to that notion.

The first act in deglutition is certainly voluntary,—that of forcing the food into the pharynx. But the acephalous infant, when food was placed upon its tongue, swallowed it. Why in a perfect infant should more nervous agency be used in swallowing the first morsel than sufficed in the acephalous infant? and why afterwards in an adult is more needed than in an infant?

Then voluntary action is to so great an extent suggested and guided by sensation, that we should naturally look for the place of its origination near the point where sensation is felt. Or let any one recollect how he learned to skait; how strictly the effort was directed by his sensations, and how slowly each more difficult movement was acquired. At length, indeed, the action became as easy as walking. But walking, running, every complicated voluntary act is, in fact, learnt by the same slow process. Till at last, when we are perfect in each, the conception of going through it is no sooner introduced into the brain and approved and adopted, than with hardly the consciousness of willing it, it is performed. By the facility acquired through use we are led to overlook the interval there was originally between determining upon any corporeal action and its voluntary performance.

When the ostrich hears or sees its pursuer, the instinctive fear and the impulse to flight we may suppose to be in its brain. But the subordinate voluntary efforts, why should they be anywhere but in the great organ which sends off the nerves of its legs. Or let us, allowing the bird more reflection than it probably possesses, suppose it when pursued to deliberate between flight and hiding its head in a bush, the preference of either course, the deliberate determination to run away, for instance, would be a separate mental affection from the consequent voluntary effort to do so. The instinctive impulse towards flight, or the deliberate adoption of it, would be, not the voluntary effort, but its motive." 54.

Too much stress seems to us to be laid by Mr. Mayo on the case of the acephalous infant. It plays the part of Peregrine in "Three and the Deuce," or is like Mrs. Malaprop's Cerberus, three gentlemen at once. Having just proved one thing and made its exit, suddenly we find it on the

stage again with a fresh wig and other coloured pantaloons, proving something else. Could this acephalous infant seize the *titty* in its hands, put it in its mouth, and give a deliberate suck, we should say there was evidence of volition, but we take it the feeding was of a different fashion. A spoonful of pap was, in all human probability, emptied into its mouth. The pap descended, for such is its wont, to the fauces and the pharynx. The excited acts and stage of deglutition were produced, and the licking of the mouth, (if licking of the mouth there was,) had probably very little of the voluntary about it. And besides, in this case, the medulla oblongata was present, and the precise degree of sensation and volition which may stick to that important portion of the nervous system is not satisfactorily determined.

We confess that we have our misgivings on Mr. Mayo's notions of volition. By a singular infelicity he degrades it below instinct, for while he puts the latter in the brain, he places the former in the nerves or in their origins. Volition surely must form a large portion of our intellectual operations—must be more perfect and less fettered in man than in the lower animals. His brain is developed proportionately—his nerves are not; yet it is in them that Mr. Mayo plants volition. True, he says a subordinate volition is in them. We do not understand this. Volition is either absolute, or it is not. If it is, there can be no subdivision of it—if it is not, it is no longer volition. Two volitions in the frame, a central and a departmental one, would be very likely to fall out. Indeed we do not see how they should agree. The mental volition would be a kind of abstraction, willing that we should go to bed—while the cranio-spinal volition would be the means of putting on our night cap. So it would come to pass that the cranio-spinal segment would enjoy too opposite properties excited at the same time and in the same way—it would feel and it would not feel—it would will and it would not will, in short, it would be an intelligent and a reflex centre. This is more than we can believe.

However it may be, one thing is clear—Dr. Marshal Hall's views and Mr. Mayo's views are as different as day and night. Dr. Hall had given definiteness and distinctness to our notions—Mr. Mayo carries us back again to confusion. For our parts, though at first opposed to Dr. Hall, because, perhaps, we failed to comprehend his reasoning in all its length and breadth, we now prefer his version of the functions of the nervous system.

Mr. Mayo thinks that the office of the anterior pyramids is probably that of transmitting impressions from the brain to the segments of the cranio-spinal cord, not from the cord to the brain. He draws this inference from the fact that the size of the anterior pyramids is not proportionate to that of the spinal cord, but to that of the brain. The other parts of the medulla oblongata have a contrary ratio, and are proportionately likely to contain the upward channels of communication. It will be afterwards seen that the phenomenon of hemiplegia of the opposite side from cerebral lesion, greatly favours the hypothesis above expressed as to the direction of the current of influence in the anterior pyramids.

We conceive that most physiologists have been of this way of thinking, all events, since the anterior columns of the cord have been appropriated to motion.

"Groups of adjacent segments of the cord are liable to have their functions temporarily or permanently suspended through lesions immediately affecting them, the segments above and below being unaffected.

No cases exemplify this proposition better, than cases of concussion of the back. Of these, which are very common, most terminate favourably. They may be referred to three classes, in reference to the parts of the cranio-spinal cord which may have been the immediate seat of injury.

1. A violent blow on the middle of the back,—as in the case of a labourer falling through the poles of a scaffolding, and striking the back obliquely against one, his fall being broken, and the principal lesion determined, by this casualty—will cause immediate numbness and paralysis of the legs, in other words, in the parts which derive their supply of nerves from the segments of the cord which have suffered concussion. If the injury of the spinal cord has not exceeded mere concussion, it is usual, by means of appropriate treatment, to obtain sensible daily improvement, and in the course of a few weeks the patient is well, liable only for some time to inflammation of the part that has been thus mechanically disturbed.

A parallel injury often happens at the junction of the neck and back. A person pitches head-foremost into a cellar, for example, and the occiput first striking the ground, and obliquely, the head is driven forwards upon the chest, and the strain or mechanical stretching, with the attendant jar or concussion, tells upon the lowest part of the cervical portion of the spinal cord. When the patient comes to himself, he can use neither his arms nor legs. But, in a day or two, feeling and voluntary motion are completely restored in the legs, while, as yet, the arms and hands have experienced no improvement. Then, in favourable cases, in the course of a few weeks, the sensibility and muscular use of the upper extremities likewise come back. In cases of severer injury, the hands and arms never entirely recover, but remain permanently numb and weak, the hands being generally contracted.

It is obvious that the speedy and complete recovery of the legs in these cases, while the nervous power of the upper extremities remains long or permanently impaired, is owing to the essential independence of the lower segments of the cord of the upper. Coupling this class of cases with the preceding, we find in them a complete illustration of the principle, that as long as the vitalizing segment is entire, any of the other segments of the cranio-spinal cord, which remain unimpaired and in sufficient continuity with it, preserve their function.

3. A very interesting case was under my care, resulting from a blow upon the lower and back part of the head, producing concussion of the medulla oblongata. The boy was at first insensible; as he recovered consciousness, his arms and legs were seen to be paralyzed. Improving daily, before long he re-acquired the use of his arms and legs and their feeling was restored; at the same time his intelligence returned, which his looks expressed, but he could not speak, though he evidently made great efforts to do so. A pencil was given to him, when he expressed by writing his feelings and his wants. Gradually, the medulla oblongata recovering from the shock, his speech returned, and he was perfectly restored. It is obvious that the temporary continuance of palsy of the vocal organs, after the use of the limbs had returned, belongs to the same class of phenomena with those of the preceding cases.

In partial disease of a middle portion of the spinal cord, the same phenomena have been observed. The feeling and motion of the legs have continued undisturbed, when the arms have been without motion from contraction or entirely paralyzed.

It has not yet been determined, how much, or what elements of the healthy structure must be left in the intervening diseased or injured segments, to allow of the part of the cord below retaining its functions. I remember an occasion on which it was tried to destroy an ass by pithing it between the atlas and occi-



put, and the cord appeared to be divided, but the animal went on breathing, and its head continued alive: on closer examination, a small fasciculus, which appeared not thicker than a packing-needle, and had formed the extreme edge of one side of the cord, was found undivided. When it was cut through, the respiratory motions stopped at once.

Disease is still more deceptive. Where there is change of colour and consistence in a part of the brain or spinal cord, pathologists are not entitled to infer that the portion so altered has necessarily lost its functions. In Mr. Stanley's case it was found that a very considerable change in colour and consistence of the posterior half of the spinal cord had existed without sensibly interfering with its known functions. The sensibility which Magendie observed to belong to its superficial fascioli might, indeed, or might not have been here extinguished. The features of the case do not touch that point.

In cases of paraplegia, there is sometimes a doubt whether the loss of sense and motion in the legs depends upon the interruption of communication with the vitalizing segment of the medulla oblongata, or upon direct affection of the lower part of the spinal marrow. Some light may be thrown upon this doubt by rubbing and pinching the skin of the senseless feet; when, if the segments of the lower portion of the spinal cord are sound, some unconscious action of the muscles of the leg and foot will follow." 62.

All this seems to us a roundabout and clumsy mode of expressing facts that are tolerably familiar. It is commonly imagined, though demonstration be impossible, that each nerve contains filaments that connect it with the spinal segment, and are the medium of the reflex actions, and filaments that connect it with the cerebral centre, and are the medium of consciousness and of volition. The one set may be injured (that is proved) while the other set escapes. If the spinal marrow be cut across, all the sentient and voluntary filaments from the part below the section are cut off; consciousness, therefore, and volition, *quoad that*, are now annihilated. If a partial injury affects the medulla, the consequences will be similarly partial.

Mr. Mayo's allusion to Mr. Stanley's case is a dogmatic argument. The case stands thus. Certain lesions are found to affect sensibly the powers of that portion of the nervous system in which they may have occurred. Certain functions are attributed (not on such evidence as silences all scruples) to the posterior columns of the spinal cord. Those lesions are found in those columns, yet those functions remain. Mr. Stanley says here is a case of difficulty. Mr. Mayo says there is no difficulty at all. "I am satisfied of the function of the part affected, therefore it is clear that such lesions may be unaccompanied with symptoms." This may be true, but it is a dangerous mode of reasoning, and requires a little more caution than Mr. Mayo evinces.

The SECOND CHAPTER is on the

#### FUNCTIONS OF THE BRAIN.

Mr. Mayo is a very steady, if not a very fortunate anti-materialist. He has generally an argument against materialism in his pocket, wherever he happens to be. At one time Mr. Mayo could not *conceive* that a thing so immaterial as thought could result from a material combination. But as animals have some thought and much instinct, they too must have

an immaterial principle. The immaterial principle must reside in all animated things, down to the very Medusæ.

Mr. Mayo has fitted another string to his bow. "The cerebral organs," he says, "and cranio-spinal cord form, therefore, one system, all the parts of which are united indeed by very elaborate and complicated arrangements, but not in such a manner as to make any one part central. But the mental operations which are manifested in these organs, the seat of many of which has been already shown to be positively determinable, are characterized, not only by their variety and rapidity of combination, but by a principle of unity manifested in their constant reference to the sense of personal individuality, in their subject. And as that singleness of the mind, or personal ipseity, has no correlative in the structure of the brain, the mind, of which it forms so prominent a feature, must be something apart from the brain. And the mind, it may be presumed, is directly and equally connected with the entire nervous system, operating one function in this another in that organ, capable, at its choice, of bending its attention to and of energizing in each singly."

So the immaterial principle pervades the nervous system, is to use Mr. Mayo's own words, "in points and corners of the frame," in our rumps as well as in our heads. The argument runs thus. Personal 'ipseity' is an unity—we cannot *demonstrate* in the brain a spot which shall represent unity—therefore the mind is immaterial. But it would, setting aside other objections, physical and metaphysical, to this reasoning, be hard to affirm that animals have not "singleness of mind or personal ipseity." The goose that cackles on the common, knows her own brood, accompanies her own gander, comes o' nights to her own nest, and punctually attends for her own handful of oats, gives, we take it, sufficient evidence of singleness of mind and personal "ipseity." She never mistakes herself for the goose of a neighbour. She has her own affections, passions, recollections, calculations, just as has the goodman's wife that tends her. Her mind, on a small scale, represents the mind of her mistress. The difference is in degree. The structure of her brain shows, too, no more and no less of a point of unity. The argument, then, must stretch over the animal creation (for *we* know not where it is to stop), and if it proves an immaterial principle for one creature, it proves the same for all. But this is piddling in the sea. It is nonsense, or Pantheism, or both. The attempt to establish the immortality of the soul by physiology or by anatomy is futile. That great point of a Christian's creed has a higher, surer, more consolatory source, than the ward of a hospital, or the bench of a dissecting-room. It is in the Holy Scriptures, or nowhere, that we must look for its establishment.

Mr. Mayo thus explains the relation of the cerebral organs to the cranio-spinal cord. "It is not," he says, "analogous to that between the organs of sense and the cranio-spinal cord, to which it has sometimes been compared. The office of the cranio-spinal cord is not to refer to the organs of sensation for sensible phenomena, to the cerebral organs for reflection and feeling. But the following steps are observed. Impressions made upon the organs of sense are followed by the appropriate sensations being felt in the segments of origin. The office of the cerebral organs is to operate on and elicit more from, or further involve, what-

ever product the cranio-spinal cord has already obtained as factor to sensible impressions."

We own that to our poor faculties, Mr. Mayo *has* "further involved" the matter. What the precise office of the cerebral organs may be, and what their relation to the cord, is not very clear in Mr. Mayo's hypothesis. It seems to us that he has got into a slough with his theory of the diffusion of mind, and sensation and volition in each spinal segment. The farther he goes, the deeper he'll sink.

Mr. Mayo presents a brief but succinct and clear account of the structure of the cerebrum and cerebellum. We are tempted to extract it.

1. The cerebellum consists externally of what would form, if it admitted of being spread out, a large thin sheet of cineritious matter, which is folded upon a plan not very complicated, the general disposition being in parallel concentric laminæ. Each of the folds, to the smallest, contains white matter, which, collected in the middle of each hemisphere, forms a short column or stem of some thickness. The white matter tears into several orders of filaments, which extend from the superficial grey matter in different directions, establishing the following communications. A great series of filaments has a direction parallel to the foldings of the grey matter, and extends between near and remote laminæ of the same hemisphere. A second series converges from the grey matter of one hemisphere, and issuing at its side and forepart, (the middle peduncle of the cerebellum), crosses in a broad band (the pons Varolii), to coalesce with a corresponding series from the opposite side and bring into communication the two hemispheres. A third, converging from the upper part of one hemisphere, descends within the preceding to form the inferior peduncle, or crus cerebelli, for communicating with the medulla oblongatæ. A fourth, derived principally from the under and the inner part of the circumference of the hemisphere, converges to form the upper or cerebral peduncle of the cerebellum, and stretches forwards to communicate with the optic thalamus of the same side, and the cerebrum: the grey capsule in the arbor vitæ is filled with white matter from this, the filaments extending to the capsule itself, piercing it, or being replaced on its outside by others which proceed onwards towards the circumference.

2. Having detached the strong band of fasciculi, called the crus cerebelli, to that organ, the rest of the medulla oblongata, consisting inwardly and above of cineritious and white matter mixed, below of white matter alone, stretches towards the cerebrum: the anterior pyramid passing through the pons Varolii, the rest of the medulla crossing over it. The striking feature now presented is the increment of white matter, which springs out of masses of cineritious matter that occur in crowded succession. The pyramid in passing through the pons, divides into coarse fasciculi: the intervals between these and the transverse fasciculi of the pons are filled with grey matter, which originates new white filaments; these reinforce the fasciculi of the pyramid, which issues of many times its former size forming the under and outer layer, or crust, of the crus cerebri. Above, the tubercula quadrigemina furnish a new supply. The mass of ascending filaments, now of some depth, passes through the optic

thalamus, which has the form of an egg, pointed forwards, with a deep wedge-shaped part cut out in front, making a space in which the ascending white fasciculi are lodged. The structure of either thalamus is of white and cineritious matter intermingled, tearing in concentric layers disposed around the ascending fasciculi: a vast increment of ascending white filaments is derived from it. The fasciculi, which have now passed through the thalamus, have finally to traverse the corpus striatum, which has a horse-shoe shape open behind, with cross bars or processes uniting the two sides: through these the white fasciculi ascend, having further additions made to them from this source. So various are the sources, and so numerous the fasciculi derived from them, of which the whole series of divergent fasciculi of either hemisphere of the cerebrum is to be constituted.

3. The structure of the cerebrum follows the same type with that of the cerebellum. But the exterior of either hemisphere is formed of a double sheet of cineritious matter, with a fine layer of white interposed between the two. This triple exterior sheet is thrown into folds or convolutions, larger and of a less regular disposition than the laminæ of the cerebellum. The mass of white matter which forms the bulk of each hemisphere, and processes of which fill the hollows of the convolutions, is resolvable into three orders of filaments. First, into filaments placed parallel to the surface, which unite neighbouring convolutions of the same hemisphere, below them others which unite the more remote. Secondly, of fasciculi, which, derived seemingly from the whole cineritious surface of one hemisphere, converge to coalesce with corresponding fasciculi from the opposite. These form two very unequal bands of communication. The upper, or commissura magna, consumes nearly the whole. The anterior commissure unites together the inferior and anterior convolutions of the middle lobes of each hemisphere only. The fornix is partly a commissure of the same description, but principally a means of junction between the optic thalamus and the posterior and middle lobes of the same side. Finally, to unite the hemisphere thus constituted with the parts below, the collected force of ascending filaments derived from the numerous sources recently described diverges in either hemisphere to its entire circumference; every part of this structure is easily unravelled, except where the divergent and convergent fasciculi meet and decussate each other in the hemispheres.

After quoting the experiments of Magendie, of whom he says, that his "talent for experimental physiology transcends that of any other physiologist living or dead"—and of whom we would say that his butcheries have transcended those of all other physiologists put together, while his powers of reasoning justly, on his *vivi-sections*, are very far from first-rate—Mr. Mayo announces it as "experimentally established that there exist in the encephalon at least four series of currents or forces, intended to maintain a constant state of equilibrium, and giving rise to sensible disorder whenever that equilibrium is disturbed." Mr. Mayo is a man of more faith than ourselves. We are not so satisfied of the reality of these four currents or forces antagonising one another. It would require something more than the violent mutilations and apocryphal cases hitherto published to prove them.

It is the fashion of some persons to see nothing in the human cerebrum which physically distinguishes it from that of animals lower in the scale than man. If we recollect rightly, Mr Mayo put forth some such notion in a former work. We criticised it at the time, and are glad to perceive that he has now adopted a more just opinion. "The human encephalon is found," says he, "first to be specially enlarged and amplified in those parts, which are themselves characteristic of the brain of mammalia, namely, the hemispheres of the cerebrum and cerebellum; secondly, to possess these parts of much greater relative size than the animals which come nearest to man, as the dog or the orang-outang; thirdly, to have the same of so great absolute size that they are actually much more voluminous in man than in the horse or cow, which so much exceed man in weight; but, fourthly, to have cerebral organs less in volume than those of the elephant and whale in agreement with the immense disparity of general size,—the brain and cerebellum of the elephant and whale meanwhile not manifesting with their increased size the human proportions of the parts of the encephalon, but retaining the lower type." This we may safely say—that, taking size, complexity, development of those parts which depart most widely from the simplest type, the human cerebrum outstrips all others as Olympus does a mole-hill. This is a plain common-sense view of the matter. The paradoxes of very clever people are often absurd enough.

After noticing that the cerebrum is connected with the apparatus of smell and vision, as well as with the cranio-spinal segments and their nerves, and that the cerebellum has no connexion with those senses, Mr. Mayo gives a guess at the functions of the latter organ. "It may be observed," he remarks, "that the inferior peduncle, or crus cerebelli, on either side attaches itself to the lateral and posterior surface of the medulla oblongata, whereby the fasciculi which descend from it are brought into continuity with those of the spinal cord which contain the posterior or sentient roots of the spinal nerves. Now the class of common sentient cranio-spinal nerves, has as one of its peculiar functions to minister to the inward or bodily sensations. Is it probable that some of the functions of the cerebellum may be to develop instincts connected with that class of sensations?"

This idea is consistent with the belief, which so much prevails among phrenologists, that the cerebellum has to do with the sexual impulse. It appears to me, indeed, most probable that the cerebellum does not originate that impulse. That impulse is a sensational appetite, like hunger, and depends for its existence upon the state of the bodily organs and organs of mere sensation. The argument commonly deduced by phrenologists from pathological phenomena is certainly unsound. As Müller remarks, "The coincidence of disease of the spinal cord with affection of the genital organs is much more frequent than of disease of the cerebellum." And Cruveilhier even mentions the striking instance of a girl, in whom after death the complete absence of the cerebellum was ascertained, yet who had manifested a strong tendency to a practice growing out of the appetite referred to." We confess that the phrenological argument on the sexual functions of the cerebellum has always seemed to us to be pushed much too far.

Mr. Mayo next enters on the consideration of the intellectual functions of the cerebrum. The following analysis of the admeasurements of Tiedemann proves conclusively, to our minds, that magnitude has, as we might fairly imagine, *a priori*, a direct and leading influence on the intellectual functions. The *great* facts and large generalizations are those that never mislead. It is individual observations and special circumstances that are so fallacious.

"He (Tiedemann) gives tables of the internal area of the skull in Europeans, Americans, Malays, and Negroes. Of the first he adduces seventy-seven examples; of the second, twenty-four; of the third, thirty-eight; of the fourth, forty-eight. The method of gauging each which he employed was to ascertain the weight of millet-seed required to fill it. I find by averaging his tables, that the European or Caucasian cranium contains forty ounces; the American and Malay, thirty-nine; the Negro cranium thirty-seven only. In other tables in the same paper the length and breadth of the European cranium are shown to exceed those of the Negro cranium. And a very curious fact is added respecting the brain of the Bosjes-woman, who was called the Hottentot Venus. The convolutions of the hemispheres in this specimen [the dimensions of which are likewise of the smallest,] are more strictly symmetrical than is the case in European brains. This feature [absent] I may take occasion to mention, in the brain of a New-Zealander which I examined,] is an approach towards the type of the cerebral organization of animals as distinguished from that of human beings. From the orang-utang downwards the two cerebral hemispheres of animals exhibit in their superficial markings great closeness of resemblance; whereas in European brains the resemblance of the gyri of the two sides is general only, and the details of their disposition vary remarkably." 98.

Here we see, in the gross, a great and measurable magnitude of the Caucasian brain, and history demonstrates a corresponding intellectual power. Let those who will try to argue away this remarkable coincidence. To our minds it is worth more than all the vivisections that were ever executed.

We remember the time when Mr. Mayo was a staunch antiphrenologist. He has now come round to more moderate and juster notions. Indeed, we may observe of this gentleman, as a physiologist, that his mind is naturally too acute to admit of long persistence in erroneous views, although a certain precipitancy and incautiousness oftentimes lead him astray. But hear Mr. Mayo's phrenological creed.

"Are there grounds for adopting the phrenological chart of the cerebral organs?"

If there are not sufficient grounds for adopting it, there are, at all events, for examining it. For it cannot be doubted that the vast extent of the layer of cineritious matter, which forms the cortical part of the brain, has some strict physical relation to the conceptions and emotions of the mind; and the probability is very great, that different regions of this stratum are concerned with different classes of conceptions or emotions; and no insurmountable obstacle is apparent to the detection of such relations by measurements even upon the living. And if the primary object of the inquiry should fail, still some new truths will certainly be brought to light in its progress. But there are reasons to hope that the inquiry will prove in the end more or less successful as to its direct object. Accordingly, most of those who have diligently studied the craniological map will be found to believe that its general features, or some of its leading indications, are correct.

The circumstance of a large portion of the cerebral surface being withdrawn from observation, forms the principal difficulty in the inquiry. And there is a circumstance in one of the parts so hidden which necessarily raises some misgivings. The convolutions situated on the inner aspect of the cerebral hemispheres always present a plain superficies. Yet there can be no doubt, that these parts of the cerebral organization must vary in power like the rest; accordingly, *prominence of a part* is but an accident, at all events, in its dynamic development. But if that criterion is lost, what is there to guide one in deciding on a given extent of superficies, which organ if developed, which deficient?

However, these are perhaps not unconquerable difficulties. An intimate acquaintance with the anatomy of the brain, a familiar knowledge of the leading arrangements of its surface, of the uniform principal divisions among the convolutions, and of the varieties in the subdivisions, and a search after their concomitants, if such there are, in the external shape of the skull, may in the end enable an observer to interpret this most obscure page. And one would suppose the obstacles specified must be partly already overcome, when there are those who declare that their reading of the indications of character in the form of the head generally proves correct. Yet one must not build a too confident expectation, on such occasional success when it is real. So much is there in physiognomy, and in general extraneous indications of character, to help, without his being aware of it, the guess of the craniologist.

However, for my own part, I profess that I have not sufficiently compared the craniological chart with nature to make my opinion of value as to its correctness. Nevertheless, I have not entirely neglected what opportunities of observation have come in my way. But I certainly am not satisfied that even the principle of distribution of the mental elements which is adopted by phrenologists is just;—that the intellects lie in the front, the moral impulses in the middle, the inferior impulses at the back of the head. Indeed I have arrived at no more than a few general impressions, rather of a physiognomical than physiological character, which are perhaps hardly worth stating.

I think, *as an artist*, that persons of good capacities and of well-ordered moral impulses, have heads of a certain size or figure, or both.

1. Of the two elements, shape appears to me of more consequence than size.
2. In a small head the forehead should not recede, but should be broad or high; both together give most promise; and the upper part of the head must be round and full, not narrowing towards the vertex, nor the upper part of the sides of the head cut away. Length of head appears immaterial. The late Professor Coleman, whom I had the pleasure of knowing, a man of a social and a most amiable disposition, quick of observation, with considerable reflective powers, of a right heart and a strong head, had a cranium, of which the posterior fifth appeared to have been obliquely sliced off. Shortness, indeed, but without so much abruptness, is almost necessarily a feature in well-formed small heads.
3. If the head is altogether large and ample, a receding forehead does not seem to be at variance with the possession of high intellectual and moral qualities.
4. The head, in addition to being large, very lofty at the middle of the vertex, the forehead sloping, is a mould which has gone with the highest intellect. In this mould was cast the head of Sir Walter Scott. The head of Shakespeare appears to have been similarly shaped.
5. A head of ordinary dimensions, the forehead vertical, but neither high nor broad, the vertex well rounded and of a good height, frequently accompanies great parts. Such was the shape of the heads of Pitt and of Chatham. The forehead of Chatham was something broader than that of his illustrious son.
6. A large eye with long eyelids often accompanies eminent talent; and whether connected with the size of the orbit or with development of the anterior and inferior convolutions of the brain, fullness and squareness of the superciliary

region generally go with this feature. In the forehead of Newton, else nowise remarkable, this prominence and largeness of the lower part of the forehead are strikingly pronounced.

7. The head of Napoleon was characterized by its size and squareness, the forehead broad and vertical, and at the same time higher than ordinary: the eyes remarkably large, and the eyelids long. The largeness of the superciliary region was balanced by an equal mass above it.

When large heads are met with in combination with dull capacity, their shape is commonly ungainly, and projections of bone, having no relation to cerebral development, catch the eye.

The worst physical character is great lateral narrowing of the upper part of the head, with a coarse breadth at the lower and middle part. Add to this a mean forehead, and want of symmetry of the two sides, and the portrait is yet deteriorated.

The heads of the ablest and the best, whether large or small, generally look more carefully shaped and better finished than those of commoner persons. The shape, too, in which they are fashioned, seems better filled out; so that the bony boundaries are lost sight of, and the roundness or fulness of the contained organs is the predominant characteristic." 104.

Those who *now* sneer at phrenology in toto, are neither anatomists nor physiologists. That the brain is the organ of the mind, whatever the latter may be, is undeniable. That the mind itself is not a simple unity, differing in different individuals in degree only, is as undeniable. A man is born a Byron, a Napoleon, or a Newton, and no circumstances, no mental training could make of the mass of men either of the three. If, then, the mind be a composite thing, built up of various and even clashing qualities, and if the brain be the organ of the mind, the brain must have parts corresponding to those qualities and adapted for their exhibition. Take, if you will, the material hypothesis and it comes to the same point. What reasoning and observation deduce from the manifestations of the brain in its sound state, the phenomena of injuries and disease confirm. The practical difficulty of determining the several mental faculties and their local habitations is great, it may be insurmountable, but the attempt to surmount it is philosophical, and it is by observation only that it can succeed. We do not see, therefore, what there is in phrenology, abstractedly speaking, to laugh at. The truth is that the opposition is that of metaphysics to anatomy and common sense.

Like Mr. Mayo, we will not go the length of allowing the correctness of phrenology in detail. But it is only fair to admit that there may be much truth even in that. When we see, as in the Caucasian race, that size of cranium is the great criterion of intellect—that certain forms of head are historically and by all admission stamped as peculiarly intellectual—that even special mental qualities have a special cranial conformation—when we see all this which common daily observation proves, shall we say that these superficial truths, these facts that swim upon the surface of experience, are all that study, time and reflection can amass—that philosophy must attempt no more without being set in the stocks as a witch, or pelted as a natural? To our apprehension to argue in this way is the fanaticism of prejudice, the confidence of ignorance, the re-enactment of that opposition to induction which has worn so many shapes, and has been foiled in all.



A CHAPTER ON the INFLUENCE OF THE NERVOUS SYSTEM OVER THE BODILY FUNCTIONS contains nothing to attract our notice.

Next comes a CHAPTER ON PERCEPTION.

In the Chapter on PERCEPTION Mr. Mayo thus dilates on the "Muscular Sense." "The muscular sense immediately feels resistance and motion: and is attended with the idea of force exerted, as an inward sensation; and with distinct conceptions of outness, locality, and direction. The sentient organ of the muscular sense is the voluntary muscles. The nerves, which minister to it, are derived from the ganglionic fasciculi of the fifth cerebral and of the spinal nerves.

The sensations, which suggest to us hardness, softness, weight, lightness, pressure, yielding, support, want of support, are evidently modifications of the feeling of resistance: but they are so mixed up with the impression of something without as their cause, that the terms convey notions of the qualities of bodies rather than the sensations they excite, or bring to our minds objective rather than subjective conceptions.

Sensations of touch often combine with those of the muscular sense. The sensations we have of æriform, liquid, or solid resistance, for example, are united with and perfected through the tactual feelings excited by these different contacts.

Our notions of elasticity, and of the impenetrability of matter, are ulterior conceptions, founded on the sense of resistance.

Our abstract conception of motion is rendered as if it were sensible to us through this channel.

Our abstract notion of force, in the same way, is realized to the mind through this sense, and is indeed exclusively derived from it. So important are the relations of the muscular sense.

I originally supposed that the ganglionless fasciculi of the fifth and spinal nerves ministered to this sense, being led to form that opinion by observing that the nerves of the eyeball receive but a few minute filaments from the ganglionic fasciculi. And the anatomical fact is still a very puzzling one. Nevertheless, I think its true interpretation is this; that the muscles of the eye do not need a muscular sense: for their exclusive use is to govern the motions of the eyeball; and for that purpose they may be sufficiently instructed by the acute tactual sensibility of the conjunctiva, and by the sense of vision. Then the argument from uniformity will be in favour of the muscular sense belonging to the same class of nerves with the other senses.

But it may be asked, is the sense of resistance in which all the varieties of muscular sensation merge, is this seeming sensation of resistance really a *sensation*? is it indeed more than the mere consciousness of effort? may it not, then, more probably have its seat in the voluntary nerves and their origins, which are the seat of effort? This question may be thus answered. The consciousness of effort is not the same thing with the sense of effort exerted. For example, a person recovering from an attack of palsy has regained the power of moving his foot, but not that of moving his hand. Both efforts he now makes daily with different results. When he tries to move his hand, there is present only the consciousness of the effort. When he tries and succeeds in moving his foot, there is present, besides

the sensation of effort exerted, or of resistance overcome. However, it might be replied, the consciousness of effort, in the first case, is only the consciousness of trying to make an effort : and the argument proves too much, for, in the case advanced, the anterior fasciculi of the nerves are paralyzed as well as the posterior.

A better answer is found in the phenomena of anæsthesia already adverted to. Considering which phenomena, as well as the remarkable observations of M. Longé and M. Magendie, that the anterior roots of the spinal nerves, and the anterior fasciculi of the spinal marrow even, receive common sensibility through branches of the ganglionic fasciculi, I am disposed to believe that the sensations of different degrees of resistance felt through the muscles must have their communicating medium in the latter class.

In general, the muscular sense is excited by muscular exertion, and goes with it, as its measure. But there are certain sensations which are felt when no muscular exertion is being made, which yet seem to belong to the same source. I allude to the sensations experienced on being lifted, or allowed to sink ; for instance, on board ship, when you are lying on the back making no muscular effort, the difference to your sensations is most distinct, produced by the vessel rising or sinking on the water. This sense of support and want of support, what is its seat ? I am disposed to think it is still in the muscles. For when we lie perfectly still, we yet have a general sensation of the weight of our body and limbs. I conjecture that feeling to be dependent on the degree of muscular contraction called tone. The sensation of want of support, however, combines further elements.

The sense of resistance gives us, as it has been said, the most definite ideas of motion ; we feel and measure each degree of motion by this sense. Now, in the instances just referred to, this sense of motion is obviously disturbed. To the combined muscular sense of resistance and motion, we may then probably attribute the feelings which go with support and want of support.

If the feeling of passive bodily support depends upon this sense, much more so does the feeling of equilibrium, when we stand and walk self-supported.

If we stand or walk in the dark, we rely nearly entirely on the muscular sense to inform us what exertion is necessary to maintain the erect posture ; but the sense of touch in our feet contributes a little. In the light, the sense of vision materially aids us. We habitually lean upon our eyesight, in fact, as upon crutches. Accordingly, when a person unaccustomed to do so, looks down a height, and that under circumstances not calculated to disturb his nerves, when he is resting, for instance, against the balustrade round the area at the top of a column, he feels disagreeably the want of visual support, and has an impression that he may topple over. Even the sense of hearing helps us ; and its disturbance by unusual noises will increase any existing difficulty in maintaining our equilibrium."

A Scotch metaphysician, in a late number of the *Edinburgh Review*, has been rather facetious and very angry at the heresy of a muscular sense. According to him we got on well enough with hearing, seeing, tasting, smelling, touching, till anatomy had the impudence to suggest musc

sensation. The metaphysician launches the jargon of his craft on the heads of those who are not content with the five senses. Yet it needs, we think, but a plain man's attention to what occurs in himself to convince him of the reality of the sense in question. We are conscious of the slightest exertion of our muscles—we are conscious of the force with which we exert them, independently of the resistance offered by any foreign body. Let any one try, and he will feel, when he exerts a given muscle, by a voluntary effort, and without any contact of a foreign body with the surface of his own, he will feel, we say, the tremulous action of the fibres of the muscle he exerts. If the muscle be cut or injured there is pain in it. The nerves that supply it contain sensitive filaments. What then does a muscle want that an organ of sensation should have? Indeed, it would be a singular circumstance if that which is the instrument of volition, the constant messenger that the mind employs should be altogether blind and ignorant, and convey no information to that sensorium with which it is in such direct communication. How valueless is a voluntary muscle without feeling is seen in anæsthesia.

It may be urged that the muscular sense is a modification of touch. Suppose that it is so, it is *not* touch, and, if it be not touch, it is distinct from it. It may be true that it usually goes along with touch, but any body may satisfy himself of its independence. Taste is probably a modification of touch too, indeed it is anatomically nearer touch than is muscular sensation. And taste is unquestionably combined with touch in producing the phenomena assigned to it. Yet metaphysics have admitted taste within the pale of the senses. Anatomy, if we are not mistaken, will compel the admission of the muscular sense also.

We do not, ourselves, see why the muscular sense should not depend on the ordinary sensitive filaments of the nerves. The sense in question cannot be separated from the sensation of muscles, and that must depend, if the physiology of the nervous system is not false, on the ganglionic fasciculi. It is going out of the way for a difficulty to suppose otherwise.

It is probable that no change of place or position occurs without the muscular sense participating in the feeling that ensues. But we are not at all satisfied that the sensation of being lifted or sinking must be so exclusively located in the muscles as Mr. Mayo supposes. We have been a good deal upon the sea, but we never found that the vessel could so rise, or fall, or roll as to make us conscious that it was so, without ourselves being so affected that new points of the surfaces were pressed or withdrawn from pressure. Touch and the muscular sense must here go in harness. We do imagine that Mr. Mayo includes in the category of muscular sensations, that sinking at the epigastrium felt when the vessel pitches heavily, or in descending in a swing. This is another matter altogether.

Passing over Mr. Mayo's brief notice of the laws of vision, taste, smell, we arrive at his account of perception, and of the conceptions of time and space and causation. His allusion to Berkeley and to Kant is happy if it is not convincing. "Berkeley," he says, "discerning that we are immediately conscious of sensation alone, was willing to annihilate matter altogether; Boscovich proposed to substitute for it a system of dynamic excitants of sensation; while Kant, more daring still, regarded

even space, and time, and causation, as figments of our reason. But to what do the doubts thus raised amount? To the proposition, that our notions of matter, force, motion, and our intuitive conceptions of space and the rest,—being only suggestions of the understanding,—have *possibly* no counterparts out of the understanding. And what is their solution?—'That many possibilities exist which contain no portion of probability, and that these are of them.

For, why should Nature have designed to mislead us? Why, when an elaborate mechanism was planned to convey to us ideas of existences beyond our own minds, should that mechanism have been perverted to give us incorrect ideas? Why, when for perception alone so many different avenues of knowledge are opened, should their issues have led each to a different deception, the whole treacherously combining to produce one vast coherent falsehood? Was this easier to nature than speaking truth, or more for our advantage than discerning truth? The magnificent system of the universe, of which Newton unveiled the laws, the constantly increasing wonders of the microscopic world, each so far from us, and with such difficulty brought within the ken of science, why should Nature have framed such remote and august lies? Why not rather believe that her aim has been always to impart truth to us, and that our understandings have the noble power, when carefully trained and diligently exerted, of contemplating her immediate workings, '*veramque patentem Deam!*'"

The impossibility of *refuting* doctrines so opposed to experience as those of Berkeley and Kant is evidence at once of the limitation of our faculties and the greater imperfection of our language. Yet the common sense reply to their bold hypotheses will probably always satisfy the world—that although experience be the only basis of our knowledge, and experience *may* be false, they can show in favour of their opinions but forms of words and suppositions only. On which side the probabilities lie, mankind in general will determine as they have done. Such is our intellectual constitution that *demonstration* of the reality of our conceptions is impossible; the human understanding does not reach so high. But if the *proof* of that reality be not perfect, there is nothing like a shadow of *proof* of their falsehood. If our senses, our only ministers of truth, deceive us, there are at all events no other instruments of knowledge to appeal to. Any hypothesis which excludes their evidence extinguishes all credibility in its own.

We know not a better sample of Mr. Mayo's style than this sketch of the rise and progress of those moral sentiments which happily govern the civilized world. It displays the man of taste and information, and conveys in a few words happily chosen and elegantly disposed the great epochs of our race. We are sure we shall be excused for quoting it.

"In countries by the eastern shores of the Mediterranean civilization began. Between 2000 and 1500 years before the Christian era all its elements were there already put forth. In Egypt science and the arts, though coupled with degrading superstitions; near, for a while within it, the people who preserved the knowledge of the true God; and Phœnicia could boast her commerce and letters, and Asia Minor sent her colonies to Greece and Italy. It was the dawn of

the first\* day of the world, which with the night, that followed lasted 3000 years.

As that day went on, to string exertion to its utmost tension, war, hitherto unimportant on the general destinies of mankind, broke forth in invasion and conquest; and the Persian, of a middle race unable wholly to emerge from barbarism, overran and subdued Egypt, and Asia Minor, and threatened Greece, whose energies and loftier nature stayed and repelled his myriads.

Then shone the triumphs of that wonderful people; and heroism and valour, the noblest literature, the perfection of imaginative art, the subtlest philosophy,—but not these alone,—the truest conception of morals, formed their chaplet. Let me quote the golden words of the greatest of their sages, to show how admirable was their wisdom.

‘God is one, perfect in himself, giving the being and well-being of every creature; what he is I know not, what he is not I know.’—PLAT. *Phæd.*

‘That God, not chance, made the world and all creatures, is demonstrable from the reasonable disposition of their parts for use and defence. \* \* He is such and so great as that he at once sees all, hears all, is everywhere, and orders all.’—XEN. *Mem.*

‘The best way of worshipping God is to do what he commands.’—XEN. *Mem.*

‘Justice and every other virtue is Wisdom.’—XEN. *Mem.*

‘A just man and a happy man are one. He who, in opinion, divided honesty and profit (which are coherent by nature) did an impious act.’—

‘To be employed is good and beneficial; to be idle hurtful and evil. They that do good are employed; they that spend their time in vain recreations are idle.’—XEN. *Mem.*

‘The body, being compounded, is dissolved by death; the soul, being simple, passeth into another life, incapable of corruption.’—PLAT. *Phæd.*

‘The souls of the good after death are in a happy estate united to God; the bad suffer condign punishment.’—PLAT. *Phæd.*

‘I have not reigned to-day,’ if the day had passed that he had not conferred a benefit was the saying of the illustrious pupil of Aristotle, whose military genius rolled back, after two hundred years, the tide of war over Syria, Egypt, (whose strange fate it has been to have fallen the successive prey of every conqueror from Cambyzes to Napoleon,—of the Greek, the Roman, the Arab, the Turk,) over Persia and India; and war found then an office which seemed to legitimate it,—the diffusion of civilization; war, now her foe, and fostered by one civilized country alone, which, keeping the front rank in intellectual progress, labours under a strange retardation of moral development.

But, in ruder times, war advanced the progress of mankind; and by war came Roman greatness. Rome, whose virtues were patriotism and courage, her

“ \* To do justice to the metaphor, it was the third.

The first Milton sang; its night fell with the fall of man. The second closed with that cataclysm, the memory of which haunts the traditions of every nation! The third, long and slow in breaking.

‘It seemed that mist of dawning grey

Would never dapple into day;

How heavily it rolled away—

Before the Eastern flame

Rose crimson, and deposed the stars,

And dashed the radiance from their cars,

And filled the earth from his high throne

With lonely lustre, all his own.’

Then the light touched Memnon’s statue, and the issuing music chimed the third sunrise.”

genius conquest, who made her own the arts and letters of Greece, and the religions of all the world she subjugated; whose function it was to impart civilization, directly or indirectly, to the entire white race of men,—as provincials, as allies, or as the hostile neighbours, who in time were to rend and share her empire. But not civilization alone, but with it true religion, that, where Rome stood, there was left Christendom.

Then fell comparative darkness,—the figurative night of the middle ages,—when rapine and violence lorded it over the world; till nature reclaimed her order, and the arts of peace undermined feudal tower and donjon wall, and the foundations of a higher civilization were cemented.

But in that night of barbarism, there had been the stars, and Alfred had reigned, and justice had sometimes been seen on earth, and the lamp of science and learning had not been extinguished, and there had been watchers for the dawn; and in that night had been the lofty dream of chivalry, which left on the waking world the impress of Honour.

Then began the second day. Towards fifteen centuries of the Christian era, and the same elements reappear in freshened activity, as at the same time before it. For Phœnician adventure, Columbus; for European colonization, that of the New World; for Cadmus, printing; for Moses, Luther.

But what is the promise of this second day? In the first, three words were expounded,—where, when, why. Another interrogative remains—how. Its exposition is already manifest, in the triumphs of physical science, whose great prophet declared, 'Knowledge is power.' But in morals.—Alas! the example of the same eminent person shows that to be wiser is not necessarily to be better, and the experience of centuries has proved how little may result from the soundest ethical views, and from the positive denunciations of religion.

But yet one need not despair;—

One thing certainly contemplated in the scheme of creation is the development of the faculties of mankind, and a progression from barbarism to civilization. Now it is written in our hearts, and declared by revelation, that moral excellence is the noblest attainment. Is nature so powerless for good, or Providence so inconsistent a cause, as to have given man the means of indefinite improvement in that which is secondary and inferior, and to have condemned him to remain stationary and unimproved in that which has the highest worth?

Again, the enlargement of knowledge, and that in a continually-increasing ratio, and its diffusion, are things certain. Is it possible that this cause should fail to make men individually better, by furnishing to many new mental resources and occupation, by habituating increasing numbers to the investigation of truth, and by bringing home to general conviction that temporal prosperity and happiness depend upon self-restraint and moral conduct?

Again, the application of enlarging knowledge to government, the efforts of legislation to prevent one class spreading immorality through another, the increased repression of crime resulting from just views of the object and operation of punishments, the provision of education for every class and wholesome encouragement given to resort to it, and, if, for long to come, the extreme circumference of society must be ground down by iron penury, yet judicious attempts to mitigate that awful allotment, joined above all things with the attainable good of elevating the condition of the class immediately above the lowest, and the influence on every other class resulting from such efforts,—as they are things certain to follow, can they fail to lead to a gradual progression of moral improvement? and may one not add, that, in proportion as men are drawn towards the practice of morality, the influence of religion will be more powerful, which, if it fail to make bad men good, yet never fails to make good men better?

And these our hopes, do they not find encouragement even in the visionary interest which men take in the future progress of their race, and in the allied infirmity of wishing to live in its remembrance?" 158.

These sentiments of Mr. Mayo are noble and just. He is above the sordid bigotry of wishing to restrain the diffusion of knowledge—he contemns the puerile timidity which dreads it—and accepts, as all bold and good men should, the law of God, intellectual as physical, “Let there be light.” What arrogance it is, what blasphemy in a privileged class to claim the monopoly of knowledge—to arraign the impartiality of the Deity, and seek to interrupt his dispensations. He has given to the great race that enjoys the dominion of the world, faculties susceptible of improvement and that yearn for it. History has been but the struggle for knowledge and its power. Can those who look back suppose for an instant that it is possible to pause? The battle of mental progress, as of freedom,

once begun,  
Bequeathed (like it) from sire to son,  
Thou’ baffled oft, is ever won.

It is the part of wise men to forward and to *direct* it. Nor need we despair of the result. The will of God cannot be evil, nor the destiny he accords his people one to murmur at. We do not fear the moral tendencies of the spread of information. Take the educated classes of Christendom now and compare them with the privileged orders of any former *era*. Not only have the coarser vices disappeared, but even those which are tinctured by refinement are softened and subdued. If there is a large and demoralised population in our cities, it is where the benign influence of education has not penetrated, and where the mischievous laws of a dominant class have been festering. But the evil will work its cure. Masses of men cannot be made vicious with impunity, and it will be more costly to feed the poor and to coerce the criminal, than to instruct and give scope to industry. As the world has been marked by great phases of change in the structure of society, so it will continue to be. And it requires no deep penetration to perceive that, as the last six centuries have been distinguished by the rise into power of the middle class, our own time and that to come will be agitated by the heaving of the lower class.

We must conclude. Before we part from Mr. Mayo, we would make one or two remarks. If we have indulged in criticism it is because Mr. Mayo singularly invites it. He puts forward his opinions boldly, and challenges opposition. He cannot complain of receiving what he courts. Nor do we think him fair to others. He can afford to give every man his due, and yet retain a large intellectual capital. For he is a man of unquestionable talent and of liberal attainments. Like Iago, we would say—

Beware, my lord, of jealousy.

Were Mr. Mayo candidly to admit the claims of others, others would be more free to admit his own.

We are not in the habit of pronouncing judicial opinions on books. It is an assumption of the critic only tolerated, yet not justified, because he is concealed. We shall therefore say no more than this—we would advise Mr. Mayo, in a subsequent edition to reconsider carefully some portions of his work, and while he softens the expression of what is doubtful, give extension and further development to what is known. In the volume as it is, there is much that is excellent, much that proves the high place which its author deservedly holds as a physiologist. We therefore recommend it strongly.

PULMONARY CONSUMPTION: ITS PREVENTION AND CURE ESTABLISHED ON NEW VIEWS OF THE PATHOLOGY OF THE DISEASE.  
By *Henry Gilbert*, Member of the Royal College of Surgeons,  
London. London: Henry Renshaw, 1842.

MR. GILBERT conceives that if the attention of the public can be drawn to the subject of consumption, and impressed with the necessity and value of preventive measures, his work will not have been written in vain. We are of the same opinion, and shall give a brief account of the contents of the present volume.

#### STATISTICS OF CONSUMPTION.

The first chapter is devoted to statistical observations on the disease. Some of the facts are striking. The mortality from phthisis has been estimated at from a *fourth* to a *fifth* of the entire mortality of the kingdom. The following are the facts deducible from the first annual Report of the Registrar General.

The total number of deaths registered in England and Wales, from July 1st to December 31st, 1837, both inclusive, amounted to 148,701. Of this number, 27,754 were the result of consumption of the lungs, of whom 12,968 were males, and 14,786 were females. We therefore find that, according to this authentic report, consumption caused twenty per cent. of the total number of deaths, thus confirming Dr. Abercrombie's opinion, that one-fifth part of all deaths are the consequence of this fearful malady. But if we take away 12,691 deaths from old age, and 4845, which were violent, in all 17,536, we shall then find that consumption produced upwards of a fifth part of all those which resulted from disease, thus bearing out the opinion of Dr. Young and Dr. Woolcombe, that one-fourth part of the deaths occurring from disease is the result of phthisis. The whole evidence is therefore singularly unanimous.

According to the Report of the Registrar-General, pulmonary consumption destroyed more human lives during the six months referred to, than did cholera, influenza, small-pox, measles, ague, typhus-fever, hydrophobia, apoplexy, hernia, colic, diseases of the liver, stone, rheumatism, ulcers, fistula, and mortification! Those diseases proved fatal to 26,881 persons, consumption to 27,754.

*Influence of Localities.*—Mr. Gilbert first speaks of the Metropolis. The total number of deaths that occurred in this vast city, from July 1st to December 31st, 1837, both inclusive, was 24,959, being nearly at the rate of one every ten minutes. Of this number 3877 were the consequence of consumption, namely 1947 males, and 1930 females, so that London loses about one soul every hour throughout the whole year by this malady. One circumstance must, however, be observed: we have already seen that phthisis produces twenty per cent. of the total number of deaths occurring in England and Wales, or in other words, that every fifth death, from whatever cause, is the result of this malady. But from the



statement relative to London individually, we perceive that here scarcely every sixth death is produced by consumption. Although large cities are proverbially unhealthy, and pulmonary affections generally considered to prove very fatal in such localities, nevertheless, there are few towns or rural districts so free from phthisis, in proportion to their population, as London.

Mr. Gilbert thinks that phthisis runs its course more slowly in London than in many of the most healthy rural districts. He compares with London Devonshire.

From July 1st to December 31st, 1837, both inclusive, there were 4801 deaths in Devonshire. Out of this number 835 were the consequence of phthisis; namely, 389 males and 446 females. Thus we find, that of the deaths occurring in this favourite retreat for the consumptive invalid, one-fifth were the result of consumption, whereas in the smoky metropolis there were not quite one-sixth. Mr. Gilbert thinks that if patients go to Devonshire to die of consumption, they come to London in still greater proportion.

From Devonshire he passes to Birmingham and Leeds.

From July 1st to December 31st, 1837, both inclusive, the total number of deaths that occurred in Birmingham was 1459, of which 354 were the result of phthisis, namely, 190 males and 164 females. The number of consumptive deaths in Birmingham, as compared with those in London, appears not a little surprising. In the metropolis less than one-sixth of the aggregate mortality is referable to this malady, whereas in Birmingham every fourth death is attributable to its ravages.

During the period above cited, namely, from July 1st to December 31st, 1837, both inclusive, the total number of deaths which took place in Leeds amounted to 1582, out of which 335 were the results of phthisis, namely, 161 males and 174 females. We, therefore, here find the mortality from consumption comparatively great, upwards of a fourth part of the whole deaths resulting from it.

In Norfolk and Suffolk the total number of deaths occurring from July 1st to December 31st, 1837, both inclusive, amounted to 6017. Of these 1306 were the consequence of consumption, namely, 582 males and 724 females. A fourth part of the population would therefore appear ultimately to fall the victims of this malady in this district; so that pulmonary phthisis may be fairly considered more prevalent in Norfolk and Suffolk than in Devonshire or London.

*Increase or Decrease of Consumption.*—In a work of statistics by Mr. Marshall, there is shewn the annual mortality in the metropolis during a period of two hundred and four years, namely, from 1629 to 1831, both inclusive. Mr. Gilbert observes :—"Availing ourselves of this work, we shall go back to the year 1629, and calculate the proportional share of deaths produced by consumption, from that period, during intervals, averaging ten years, up to 1830 :

YEAR.	TOTAL NUMBER OF DEATHS.	DEATHS FROM CONSUMPTION.	PROPORTION FROM CONSUMPTION.
1629	10,554	1,827	One-fifth.
1647	14,059	2,423	One-fourth.
1657	15,046	2,757	One-fifth.
1667	15,842	3,087	One-fifth.
1677	19,067	3,272	One-fifth.
1687	21,460	3,473	One-sixth.
1701	20,471	2,678	One-seventh.
1710	24,620	2,706	One-ninth.
1720	25,454	3,054	One-eighth.
1730	26,761	3,728	One-seventh.
1740	30,811	4,919	One-sixth.
1750	23,727	4,543	One-fifth.
1760	19,830	3,776	One-fifth.
1770	22,434	4,594	One-fourth.
1780	20,517	4,889	One-fourth.
1790	18,038	4,852	One-third.
1800	23,068	5,721	One-fourth.
1810	19,893	5,427	One-third.
1820	19,348	3,959	One-fourth.
1830	21,645	4,704	One-fourth.

From the above table we may infer, that pulmonary consumption has of late years decreased in the metropolis; for from the year 1770 up to 1830, it averaged one-fourth, and sometimes as high as one-third of the whole mortality, whereas now and for some years back, it has not exceeded one-sixth. The variations occurring during the period embraced in the table, are, however, very considerable, and show that in 1701, 1710, 1720, and 1730, the deaths from phthisis were proportionably fewer than they even are now. Sir James Clark, in his *Treatise on Consumption*, gives a table, constructed from data contained in Mr. Marshall's work on the *Mortality of the Metropolis*, and remarks that 'from 1700 to 1750 the deaths from consumption increased from four to six in every thousand of the population, and that since the last period they have remained stationary. But in coming to the conclusion that this disease has increased, he must surely be aware that he has selected, as a period of comparison with subsequent dates, one when the number of consumptive cases was singularly low. Had he gone back for a few years, he would have found the number of phthisical cases averaging one-fifth of the whole, and in 1687 they were, as at the present time, one-sixth.'

Mr. Gilbert thinks, however, that, during the last ten years, consumption has increased in the upper classes, but decreased in the lower. Sir James Clark is of the same opinion with reference to the upper classes.

*Influence of Climate.*—Consumption is not rife in cold countries. It is rare in Russia and in Canada. Mr. Marshall gives a table, showing the mortality in each of the twenty-four provinces of this country, and in the city of Stockholm, in the year 1820, in which table he exhibits the various diseases from which the mortality ensued. From this account it appears.

that during the year referred to there were 31,572 male deaths, of which number, only 3110 were the result of consumption; being only one-tenth of the whole. Out of the female population there occurred 31,358 deaths, of which 3195 were from phthisis; constituting one-ninth part of the whole. Now as one-fifth part of the population die in England, where the cold is not nearly so intense, it follows that mere cold, if uniform and steady, is not conducive to consumption. But in a variable climate the cold months are the most fatal months. Dr. Heberden has furnished some Tables which conclusively establish this.

He gives a statement of the mortality from consumption in London, during a period of ten years, namely from January, 1763, to December, 1767, and from January, 1795, to December, 1799, these years consequently inclusive. The facts were extracted by him from the weekly bills of mortality, and show the variations every week, during the whole period. The following is a statement of the whole number of deaths from phthisis during the ten years, showing the months when they took place:—

January - - - - -	4363	July - - - - -	3249
February - - - - -	4527	August - - - - -	2925
March - - - - -	4634	September - - - - -	2994
April - - - - -	4227	October - - - - -	3521
May - - - - -	4043	November - - - - -	3711
June - - - - -	3604	December - - - - -	4516

We therefore find the occurrence of death from consumption more frequent during the Winter than Summer months. The variations during the four seasons of the year, are as follow:—

Winter - - - - -	13,406
Spring - - - - -	12,904
Autumn - - - - -	10,226
Summer - - - - -	9,678

In countries where the Winter is not so severe as in Great Britain, the Spring is generally most fatal to the consumptive patient. This has been illustrated by M. Benoiston, as follows. Out of 12,668 deaths from phthisis, occurring at Milan, Paris, and in the adjacent country, the proportion in the different seasons was as follows:—

Autumn - - - - -	3001	} 12,668
Winter - - - - -	3109	
Spring - - - - -	3482	
Summer - - - - -	3076	

*Heat.*—Mr. Gilbert is of opinion does not particularly induce consumption. If it did, why should consumption be comparatively rare in the East Indies?

*Humidity.*—This too he contends does not favour the production of phthisis, but rather the contrary. Among other arguments, he cites two Tables from Dr. Lombard of Geneva, the inference from which is, that workmen surrounded by a hot dry atmosphere yield more readily than her workmen, in the proportion of 127 to 114; from which it may be inferred, that if a moist atmosphere is a preservative against consumption, a hot dry air may be considered as a cause of the disease.

*Influence of Occupations.*—It is well known that the inhalation of metallic or other particles, disseminated in the air, disposes to consumption. Perhaps the two following are the most striking examples of the fact. M. Benoiston de Chateauneuf informs us that the whole of France, and the greater part of the continent of Europe, is supplied with gun-flints from a single parish in France, that of Meusnes, containing a population of twelve hundred souls, of whom, about three hundred families are occupied with the flint manufacture. The French government alone consumes ten millions annually, and the exports amount to two hundred and eighty millions. This singular trade, however, has not been acquired without a terrible sacrifice of life and health on the part of the workmen. About the beginning of the last century, before flints were used for muskets, the mortality of the parish was one in  $33\frac{1}{4}$ ; of the births, one-half survived till the eighteenth year; and the mean duration of life was  $24\frac{1}{4}$  years. But after the establishment of the manufacture of flints, the mortality became one in  $22\frac{3}{4}$ ; half of the births were cut off by the fifth year, and the mean term of life was reduced to  $19\frac{1}{8}$  years. The cause of this enormous increase in mortality, according to the author, was consumption, arising from the inhalation of flint-dust.

Dr. Knight says, that the grinders of Sheffield "altogether amount to about two thousand five hundred; of this number, one hundred and fifty, namely, eighty men and seventy boys, are fork-grinders; these grind dry, and die from twenty-eight to thirty-two years of age. The razor-grinders grind both wet and dry, and they die from forty to forty-five years of age. The table-knife-grinders work on wet stones, and they live to betwixt forty and fifty years of age." On comparing the diseases of the grinders with those of other mechanics, in Sheffield, he found, that two hundred and fifty-four grinders laboured under disease of the chest; while only fifty-six were similarly affected in the same number of workmen among other trades.

Butchers, knackers, tanners, and tallow-chandlers are remarkably exempt from phthisis.

*Sex.*—Mr. Gilbert has constructed a table from the Registrar-General's Report, with a view of determining the influence of sex. It appears that, from July 1, to December 31, 1837, making our observations on England and Wales as a whole, consumption was more fatal among females than males. The total number of female deaths was less by 1,617 than that of males, but the number of female consumptive cases exceeded that among males by 1,818. But, to be more particular, in London, the mortality seems equally divided between the sexes; in Devonshire, a greater proportion of females fall victims to this disease than males; and, again, in Birmingham the proportions vary but little. M. Benoiston de Chateauneuf infers, from his statistical observations, that phthisis is, in France, much more common among females than males. Out of 1,554 phthisical deaths registered in four of the Parisian hospitals, (the Hôtel Dieu, La Pitié, La Charité, and Cochin,) 745 were men, and 809 women; while, of the admissions, 26,055 were men, and 16,955 women; so that the proportional deaths from phthisis relatively to the admissions are

28·5 per thousand for men, but 47·5 per thousand for women. But, observations of this sort are obviously defective.

**Age.**—Mr. Gilbert thinks consumption more prevalent in infancy than is imagined. It is overlooked in consequence of their swallowing their expectoration, or being supposed to labour under whooping-cough. M. Guernsent, an experienced physician, attached to the Hôpital des Enfants Malades, in Paris, a charity admitting no patient under the first or above the sixteenth year, gives it as his opinion, that tubercles existed in two-thirds, or even five-sixths of the bodies which he examined.

M. Bayle has drawn up a table to show the different ages at which death occurred among a hundred phthisical patients who died in the Hospital of La Charité, at Paris. From this it appears that, out of one hundred deaths from consumption, thirty-three only were below the age of thirty and sixty-seven above it, of which last number forty-four were above the age of forty.

Dr. Alison, of Edinburgh, says, that “in the practice of the New Town Dispensary here, there have been fifty-five deaths from phthisis in the last two years. Of these, eight occurred before fifteen years of age, thirteen between fifteen and thirty, thirty-four after thirty, and of these last, twenty-four after forty.”

Age then is no protection.

#### PATHOLOGY OF CONSUMPTION.

After giving a brief account of the healthy process of nutrition, and of the manner in which organizable matter is absorbed, through the lacteals into the blood, Mr. Gilbert proceeds to observe, that a large proportion of our food is either inorganizable, or not changed by the digestive organs so as to render it fit for assimilation. Now sometimes, he says, a portion of this inorganizable matter is taken up by the lacteals and circulated in that state.

These grains of inorganizable matter, so circulating, seem to produce no local mischief, often, however, rendering the whole system irritable. But when they are deposited in any organ, they there produce effects exactly similar to what would result from the deposition of gun-shot. It is this inorganizable matter, absorbed from the alimentary canal, and circulated with the blood, that constitutes the seeds of pulmonary consumption. It is the irritation produced by these seeds when deposited in the lungs, that leads to all the melancholy consequences attendant on this dreadful malady.

Pulmonary consumption, or tubercular phthisis, cannot take place till these seeds are absorbed, and circulate with the blood.

In medicine, these seeds are generally known by the name of tubercular matter, and when deposited in the lungs in separate masses, they are termed *tubercles*, and the resulting disease is denominated consumption of the lungs.

It may, however, be here observed, that when tubercular or inorganizable matter becomes deposited in any of the lymphatic glands, or in the

joints, the disease is termed scrofula. If, on the other hand, it is arrested in its passage through the mesenteric glands, already referred to, then the name of *tabes mesenterica* is employed to distinguish it. It must, therefore, appear obvious, that these three diseases are all radically one and the same, depending entirely on the presence of inorganizable matter, and differing only in locality.

Mr. Gilbert anticipates a natural question—what proof can be adduced of this inorganizable matter coming from the intestine? His answer will be found in the following passage, which it is only fair to give entire.

“In the first place, every one will allow that a great portion of the contents of the alimentary canal consists of inorganizable matter. This is indisputable. Secondly, the lacteals, which in the healthy state only take up chyle, may, when in a morbid condition, also absorb inorganizable matter. Numberless experiments have been instituted on the subject of absorption, and many with the view of detecting whether or not the lacteals admit any substance except chyle. Lister and Musgrave shewed that the lacteals do absorb inorganizable matter; and Haller, Hunter, and Cruickshank, have all given similar evidence. We cannot therefore deny, that they, when in a morbid state, may absorb a portion of that inorganizable matter, and, in fact, the experiments instituted by the above-named scientific authorities prove that they do. Dr. Ayre tells us, plainly and distinctly, that ‘diseased mesenteric glands occur in children from the acrid condition of the duodenal contents.’ Now the disease found in the mesenteric glands of children is neither more nor less than a collection of inorganizable matter, which we may fairly presume, from Dr. Ayre’s statement, came from the duodenum or alimentary canal. We therefore see that inorganizable matter may be absorbed by the lacteals, and I can have no difficulty whatever in showing its frequent existence in these vessels, with, I think, demonstrative proof that it came from the *prima via* or alimentary canal. Dr. Carswell, in his note explanatory of figure i., plate 3, representing tubercular disease, shows ‘the lacteals dilated, and filled with tuberculous matter, passing from the intestine into, and out of, the mesenteric glands, many of which are enlarged. All of them contain a greater or less quantity of tuberculous matter; one of them is completely filled with it. The lacteals are represented, arising from the ulcerated follicular gland. One of the branches was injected with mercury, the progress of which was soon arrested by the tubercular matter accumulating in front of the metal.’ The preceding are Dr. Carswell’s own words. They prove a great quantity of inorganizable matter in the lacteals close to the intestine, and in such quantity, and in such a locality, that it is directly contrary to physiology to ascribe any other source to it than the intestine. It is not a little singular that the lacteals so filled with tubercular matter are described as ‘arising from the ulcerated follicular gland,’ a circumstance showing that they were in a morbid condition, as I have represented them to be, when indiscriminate absorption is going on.

But the frequency of inorganizable matter in the lacteals and mesenteric glands, as compared with other parts, evidently points them out as its first channel, and through which it reaches the blood. Meckel, who is a very high authority in questions of pathological anatomy, tells us, that the mesenteric glands are the parts most subject to tubercular degeneration, more so even than those of the neck, groin, or axilla.

On the whole, it must be allowed that it may come from the alimentary canal by the lacteals, and that it does so is rendered very manifest, by the experiments already referred to. Moreover, there is no other way of accounting for its origin, and here is a plain, simple solution of the mystery, supported by physiology, anatomy, and every-day observation.

And as the blood receives its constituent parts from the lacteals, if we can,

the next place, find tubercular matter in that vital fluid, I think there can be no additional proof required of its original source. That inorganizable or tubercular matter does become mixed with the blood, cannot now be denied." 95.

We must confess that the proofs adduced are not quite satisfactory to our minds. That tubercles consist of inorganizable matter cannot be doubted—that *that* matter is deposited from the blood is very far from improbable, nay is most likely—that, the lungs being part of the great apparatus of assimilation is linked with the stomach and intestines, and prone to suffer when their office is imperfectly performed, must be admitted—that inorganizable matter *may* be taken up from the alimentary canal, and *may* be deposited as tubercle in the lungs or elsewhere must be admitted too—but we think it would be difficult to conceive that this is the sole source of tubercle. The blood is not alone composed of new materials; the lymph from all the tissues and organs is poured into it as well. In that cachectic state which precedes or attends phthisis, we may suppose that inorganizable matter may be derived from this quarter, and in fact that both the new materials and the old may furnish the pabulum of tubercles. In the present state of our knowledge this appears to us the most consistent hypothesis. The subject is one that merits, and, we dare say, will receive the attention of pathologists. Careful experiments and accurate analysis of the blood may do much towards solving the riddle.

Carrying out his view, Mr. Gilbert lays the mischief at the door of the lacteals. "What, then," he asks, "is their peculiar hereditary organization that induces the tubercular cachexia, and which ultimately leads to consumption in so great a proportion of cases? This, I consider, may depend on two circumstances. No organ can perform its office without the influence of nerves—therefore the lacteals must be dependent on their nerves for the due execution of their office; and as the nerves of the eye, ear, or any other organ, may be hereditarily malformed, the like may occur in those of the lacteals. Although we cannot always, in cases of partial deafness, when it results from some imperfections in the auditory nerves, detect the cause by investigating the structure of those nerves, in consequence of their exquisite delicacy, still we must grant that, in many instances, some organic peculiarity is the cause of the deficient sense. We cannot but admit that such may be the case with the nerves of the villi. But again: in the eye and ear the respective nerves are very often perfectly developed, and capable of performing their functions, yet, from some morbid condition of the surrounding parts, they cannot act. The optic nerve is in general perfectly sound in cataract, but, from the opacity of the crystalline lens, vision is nevertheless obstructed. The ear is often similarly circumstanced. Thickening of the tissue in which a nerve is deposited will render its action deficient, and I have no doubt but this is sometimes a cause of the deficiency of power in the nerves of the villi. This condition would not, therefore, depend on any diseased state of the nerves, but on the peculiar organization of the surrounding parts, whereby the nerves cannot exercise their function to the required extent.

Similar circumstances would, as respects the lacteals, by depriving their nerves of due power, also disqualify them from discriminating between organizable and inorganizable matter, and thus predispose the individual so circumstanced to pulmonary consumption. In endeavouring to prevent

the disease, it is to the original cause that we must direct our attention with any reasonable prospect of success."

In non-hereditary phthisis, he continues, the lacteals may lose their discerning faculty, by exposure to the influence of unnatural agents; and when so exposed, the result will be precisely similar to what took place from hereditary disease—namely, the absorption of inorganizable matter. The changes that take place in their structure may be exactly the same as what we found as an hereditary development, although, in this instance, other circumstances may also lead to the absorption of the seeds of consumption.

Whatever will destroy the sense of discernment in the lacteals, will lead to the absorption of inorganizable matter. The causes of this may be divided into direct and indirect. The direct causes of this morbid action are, with one solitary exception, the continued or repeated influence of matter coming in contact with the villi, which is unnatural to them. These are,—

Improper diet,  
Injudicious use of medicine,  
Inordinate indulgence in spirituous liquors; and,  
Excessive fasting.

The indirect causes of the absorption of inorganizable matter are, whatever circumstances may impair the process of digestion. And he cites as samples, deficient exercise, and excessive labour.

After some details to which we need not advert, Mr. Gilbert adds—

"From the foregoing views, we would therefore attribute the production of phthisis, in many cases, to functional derangement of the stomach, and other organs connected with digestion. This, as well as some other causes, induces irritation, inflammation and thickening, in the intestinal villi, by which they ultimately lose their delicacy of sense. Absorption of inorganizable matter is the consequence. The influence of powerful narcotics is another cause of phthisis, but one which, I believe, acts directly in subduing the sense of discernment peculiar to the lacteals, without producing any irritation on them. The ultimate effects are, however, exactly the same as in the preceding case.

I have paid considerable attention to the state of the lacteals in those who have fallen victims to phthisis, and in subjects with tuberculated lungs. In examining the villi, inflammation has often been most apparent, and their natural appearance in other respects altered. And I have reason to believe, that the inflammation and ulceration so frequently found in the mucous coat of the duodenum, jejunum, ilium, and colon, in consumptive patients, often commence in the lacteals, although there can exist no doubt but that tubercular deposit in this membrane often aggravates such a condition, and may, in fact, be the sole cause thereof." 125.

*A section is occupied with the circumstances which lead to the deposition of tubercles in the lungs.*

This he attributes to two distinct causes—increased vascular action in the pulmonary tissue, and mechanical obstruction. By the former, the smaller vessels are distended with red blood, and if this state is kept up, increased secretion of mucous, and eventually of pus, is the result. And if this take place in an individual having inorganizable matter mixed with his blood, this matter, the seeds of consumption, necessarily constitutes part of the contents of the smaller vessels, as also of the increased sec



tion or effusion. Mr. Gilbert does not doubt that it is often mechanically arrested in the capillaries, and then thrown into the air cells with the secretion, there it frequently remains. This having taken place, the individual is now in the first stage of the malady. Tubercular matter may be often seen in the air-cells of those who have sunk under phthisis, mixed up with the secretions. It is a great object then, in those predisposed to phthisis, to keep down vascular action in the lungs.

Mechanical obstruction plays another prominent part in the production of phthisis. And such may be produced by a compressed and contracted state of the chest, whether from the effects of posture, the pressure of corsets, malformation, or whatever other cause.

#### DIAGNOSIS:

From amongst some sensible remarks on this head, we select a note containing M. Fournet's researches on the expectoration of phthisis. The value of the expectoration, remarks M. Fournet, as a means of diagnosing phthisis, has been variously represented by medical writers. If, however, we consult what has been written on the subject, we discover nothing but vagueness and uncertainty. The expectoration appears under a great many different forms, none of them of any value, because, none of them fixed or constant. This variety in the characters of the expectoration is more especially remarkable, according as we approach the first stage of phthisis. The expectoration is sometimes wanting altogether, even in the most advanced periods of the disease. At other times it retains the mere salivary appearance throughout the entire course of the disease, with the exception of the catarrhal periods. It is sometimes a little viscid, sometimes clear, sometimes turbid, sometimes homogeneous, sometimes mixed with small greyish, blackish, or opaque, dull, white sputa, which are occasionally met in the expectoration of individuals, whom we have no reason whatever to consider phthisical. The sputa are sometimes full of blood; at other times, from the very commencement of the disease, they are whitish, thick, and as it were a little pearly; in some patients they put on the appearance of small masses, with uneven, jagged edges; whilst in others, those small masses are regularly rounded. Sometimes, when catarrh occurs, the expectoration assumes all the characters observed in the sputa of bronchitis. The expectoration may be wanting, even in cases where the lungs are the seat of large cavities. Amidst such a variety of forms and characters it is scarcely possible to meet any sufficiently fixed to merit attention on the part of the practitioner. In a considerable number of phthisical patients; however, the expectoration goes through the following stages:—At first, it is merely salivary, then a little viscid, but transparent and homogeneous; sometimes marked, at this period and a little later, with some streaks of blood, then becoming a little more abundant; towards the transition from the first to the second stage of phthisis, instead of the clear, frothy fluid hitherto observed, we observe some whitish opaque points, about the size of a pin's head, of a rounded or flattened which give a pearly appearance to the ordinary expectoration. These points increase in number and size, resembling grains, of a dull,

white colour, and sometimes of a dark grey, which, becoming every day more numerous, and larger, after a certain time put on the appearance of small, irregularly rounded masses, jagged at their edges, and varying in size from that of a lentil to that of a one or two franc piece. These small opaque masses seem to float in the midst of a transparent, viscid fluid; they are sometimes a little streaked with blood; we are then coming towards the end of the second stage of phthisis; sometimes cavities are already formed in the lungs; then, to complete the series of its changes, the expectoration has only to take on the purulent character, which it is known to have at this period. M. Fournet positively asserts that the *physical characters* of the expectoration can furnish no assistance whatever in diagnosing the first stage of phthisis.

Our author also quotes from M. Fournet, his account of the modifications of the respiratory murmur in the first stage of phthisis. It may be new to many of our readers, and squares very closely with the fact.

1. *Inspiratory murmur*.—Increased intensity of this murmur, which increase is exactly proportioned to the physical alteration of the lung.

Diminished duration of this murmur, which takes place at the same time as the increased intensity of it.

The character of this murmur, with respect to softness, dryness, and humidity, also undergoes a change. In the first period of the disease the inspiratory murmur is dry, rough, and, as it were, of difficult production. If we auscult the anterior part of the chest from below upwards, in a patient at the commencement of phthisis in the apex of the lung, we cannot fail to be struck at the successive transition from the soft, easy mellow character of the inspiratory murmur to the characters of roughness and dryness which it presents as we ascend—a change which becomes still more perceptible according as the tubercular infiltration increases.

2. *Expiratory murmur*.—This, the second part of the respiratory murmur, invariably presents, in the first stage of phthisis, an increase both in its intensity and duration. This increase is constant and regular. The characters of roughness, difficulty, and dryness, are as observable in the expiratory as in the inspiratory murmur. The alterations in the *timbre* of these murmurs, M. Fournet considers to be very important in establishing the diagnosis of the first stage of phthisis. They consist at first of a *souffle* a little *clearer* than the natural *souffle* of inspiration or expiration; they then pass on to the *resonant*, *blowing*, and *bronchial timbre*. The bronchial timbre admits of a *first*, *second*, and *third degree*; it then becomes *cavernous* or *amphoric*, according to the extent of the cavity. These changes, having arrived at the bronchial character, still belong to the first stage of phthisis; but beyond this, they appertain to the subsequent stages. Even though the cavernous and amphoric characters may be absent, we must not necessarily conclude the non-existence of cavities.

#### PREVENTION OF PHTHISIS.

Mr. Gilbert lays down the following indications:—1st. To hinder the development, in children, of the original predisposition to the disease

removing from the parents such causes as may be capable of inducing accidental phthisis, or of calling forth the development of hereditary phthisis.

2nd. To prevent the development of the acquired predisposition, by removing from the individual such unhealthy circumstances as may bring on this predisposition to phthisis.

3rd. When once this predisposition to phthisis, whether original or acquired, has become developed, to prevent the process of tuberculization from taking place and localizing itself in the lungs, by combating the disturbances of the function of nutrition, which, we have already shown, occasion and keep up this process, at the same time that we must remove from the patient such local exciting causes, as may have the effect of determining this morbid movement to the pulmonary organs.

4th. When pulmonary phthisis is established, to prevent, by the adoption of the preceding means, the formation of new tubercles, and so to keep the disease within its first limits of development and severity.

5th. If possible, to make the disease retrograde, by endeavouring to cause the tubercles already formed to disappear, by some other means than that of softening.

To accomplish these very desirable results, he advises judicious matrimonial alliances—attention to the functions of the uterus—attention to diseases of the respiratory system—attention to diseases of the digestive and cutaneous apparatus—fresh air and plenty of light—and a proper choice of habitation and climate.

The last chapter is on the Treatment of Consumption. Mr. Gilbert runs over the various remedies that at different times have been proposed. He speaks highly, and we agree with him, of *Counter-irritants*. He recollects one case of tubercular phthisis, where a young lady was the unfortunate sufferer, and who, as it were to consummate her miseries, was dreadfully scorched on the upper part of her body, through her dress accidentally taking fire. Here, then, was counter-irritation to an extreme; but what was the result? This lady was quickly relieved of her phthisical symptoms, and is now alive and well, never having had any return of her former distressing cough, or other attendants on tubercles in the lungs. She however, to this day, submits to prophylactic treatment. Among other modes of counter-irritation, Mr. Gilbert recommends the common nettle. He is favourable to *emetics*. He is favourable to *inhalation* of volatile substances:—First, to allay acute inflammation in the lungs and air passages, in which case a sedative must of course be used. I have found none more useful under such circumstances than the preparations of opium, combined with warm water, and inhaled through an instrument such as Mudge's or Scudamore's Inhaler. The process of inhalation ought to last for five minutes each time, and be repeated every fourth hour, care being taken by the patient not to become exposed to a cold atmosphere after the inhalation. Secondly.—When there exists an obstinate chronic inflammation in the lungs or air-passages, gentle stimulants ought to be inhaled, so as to excite fresh action in the parts. Tar, so strongly recommended by Sir Alexander Crichton, is in such cases not unfrequently extremely beneficial. It may be best administered by heating the tar in a vessel over a spirit lamp, a small proportion of subcarbq-

nate of potass being previously added, to neutralize any pyroligneous acid which the tar may contain. The heat from the lamp ought to be moderate, and the vapour diffused in a chamber to which the patient may frequently repair, and adjoining the room he may generally occupy, care being taken to keep both apartments at an equal temperature. When it can possibly be avoided, the tar ought never to be volatilized in the bedroom of the patient, as it adheres to the furniture, and when it becomes offensive to the patient, he cannot avoid the nuisance; in addition to which, by living constantly amongst it, the effect soon becomes lost."

Mr. Gilbert patronises small bleedings. He makes a variety of observations of a judicious description on different remedial measures, diet, and so forth, for which we must refer to the original.

It will be obvious that the chief feature of Mr. Gilbert's work, is the prominence which he gives to a stage anterior to the deposition of tubercles, anterior, in short, to that which is usually called and treated as the first stage of phthisis. And whether disposed or not to accept his theory in all its details, the judicious physiologist and pathologist must allow that, practically as well as speculatively, this is the high and right ground to be taken. It matters little what we term this preparatory state, whether tubercular cachexy, or any thing else, the truth should be present to the minds of all practical men that there is such a stage, and that it is *the* stage for care, and for hopeful, perhaps successful, precautionary measures. If Mr. Gilbert succeeds in directing the attention of the public and the profession to *that*, he will have achieved some good, whatever becomes of his theoretical views.

MEMOIR OF THE LATE JAMES HOPE, M.D. Physician to St. George's Hospital, &c. &c. By Mrs. Hope. To which are added Remarks on Classical Education, by Dr. Hope; and Letters from a Senior to a Junior Physician, by Dr. Burder. The whole Edited by Klein Grant, M.D. &c. &c. London, Hatchard and Son, 12mo. pp. 358.

THE loss which the profession and the public have experienced in the person of Dr. Hope, is too recent and too severe to have worn out of their memories. A Memoir of him will rather perpetuate than revive the recollection of his talents and his goodness, and will form a melancholy yet pleasing boon to those who knew and esteemed him.

The life of a physician is too little chequered by events of magnitude, to present those charms of adventure and vicissitude which captivate the public mind. Dr. Hope's is no exception to the rule. Yet there are some incidents and traits of character interesting, if not instructive to those who are treading in the same walk of life, and have earned or wish to earn that success, a large share of which was accorded to him.

James Hope was the descendant of a respectable Scotch family. H

father was a merchant and manufacturer at Stockport, and retired from business to a library and garden, with a good fortune, at the age of forty-four. He died in 1839, at the age of eighty-five. Dr. Hope was the tenth child of a family of twelve, and was born at Stockport, on the 23rd February, 1801. Of this family of twelve, only four survived. Five died under the age of twenty-five; two others, including Dr. Hope, died at forty; and the four surviving members of the family, are of a remarkably delicate constitution. Five of the eight have died of tubercular disease, so that their constitutions had in them something radically wrong.

At the age of six or seven James Hope was placed at a day-school, where he acquired, at all events, the art of penmanship and of drawing maps, which he executed with singular beauty and correctness. There is still extant a chart of the History of England, above a yard square, done at the age of nine, and so admirably written, as well as coloured, as not to be distinguishable from an engraving. At the age of ten he went to a grammar school at Knutsford, and at twelve, to the Rev. G. S. Weidemann, who qualified boys for College. Here he read the standard authors, classical and native, and had his character, in some degree, formed by the "Rambler." To the paper which bore the title, "Life sufficient to all purposes if well employed," he ascribed the value which he placed on "fragments of time," and he used to say, that in the employment of these lay the secret of his having done so much as he had crowded into his short life. To one who knew him intimately, it is most interesting to read this paper, and to notice how literally he acted up to its precepts; and how, after the lapse of nearly thirty years, he was in the habit of addressing to his young friends admonitions exactly corresponding with those of the Rambler.

At the age of fourteen young Hope went to the Macclesfield Grammar School. Here, feeling mortified at his slight acquaintance with Greek, he proposed to a boy in the class above, to get up at four o'clock in the morning, and read through Herodotus with him. This plan, including also a portion of Thucydides, was continued for a year and a half. He had an excellent memory, and became an accomplished angler, for he not only made his own flies, but even his lines and rods, the latter being almost as neat and true as any that could be purchased. Like several other eminent men, he preserved his attachment to trout-fishing through life. He read the highest classics, shot, fished, and joined the yeomanry lancers. He became so expert in the use of the lance and broad-sword, that he was appointed fogleman to the corps, and on leaving his military calling, he was presented with a broad-sword, to which he always attached much value, and which is now in the possession of his family.

After he had spent a year at home, his father proposed to him to become a physician. To the medical profession, he had always felt the strongest dislike, and this proposition was received with corresponding dissatisfaction; but at last he consented to study physic, on condition that he should be allowed to practise in London.

In October, 1820, James Hope went to Edinburgh in order to commence his medical studies. In conformity to established usage, his first year was principally devoted to anatomy, and was to him one of disgust and unhappiness, from the extreme repugnance he felt to the pursuit. But he

felt that his lot was cast, and resolved to conquer dislikes as well as difficulties. He compelled himself to the diligent and persevering study of anatomy, but he dissected in gloves and with forceps, so as never to touch the body; and so strongly rooted were his feelings, that it took two years to overcome them in any great degree, and they continued to affect him slightly even six or seven years after. He had set up for himself Dr. Baillie as his model, and saw the value of a knowledge of morbid anatomy to him who would succeed as a physician. As his biographer remarks, it is a rare thing to see a man not merely giving an ordinary share of attention to that which inspires him with disgust, but voluntarily selecting it as the subject of his peculiar study.

Dr. Hope became one of the Presidents of the Medical Society of Edinburgh, House Physician to the Edinburgh Infirmary, then House Surgeon to the Infirmary. In August, 1825, he took his degree. But he had also learned to play the flute, and he had been from boyhood a draughtsman. A copy of a small Vandervelde was thought worthy of a place in the collection of the Hon. Charles Hope, Lord President of Scotland; and a copy of Stirling Castle, by Simpson, about 3 feet by  $2\frac{1}{2}$ , is in the possession of Professor Monro; both of whom are able connoisseurs in the art. It was principally, however, to subjects of morbid anatomy that he devoted his pencil, notwithstanding the great violence it did to his tastes and inclinations. When elected House Physician to the Edinburgh Infirmary, he began to carry into execution his idea of a work on morbid anatomy, to be embellished with plates. He employed an artist for some months, but at length discovered that it took more time to superintend and correct him, than to execute the drawings for himself. He, therefore, adopted the latter plan, and tried every expeditious mode that he could devise for curtailing the process. His general rule was to finish each drawing at a single sitting, or, at the utmost, two, in order to avoid changes of colour in the specimen from too long exposure to the air.

In January, 1826, Dr. Hope went to London, and became a dresser at St. Bartholomew's Hospital. In the Spring of 1826, he passed his examination before the College of Surgeons, being determined to have this last proof of his competency in surgery. Immediately after this, he went to Paris. He thought he knew enough French to get on. But he found his mistake. He went to engage apartments at a private hotel, but after a pantomimic performance of some twenty minutes between himself and the landlady, it was found that neither could, in the slightest degree, understand the other; and, after laughter and reciprocal bows, he retired in despair. Having settled at another hotel, he now determined to devote twelve hours a day to the mere practice of speaking French. At the end of a month he ventured to sally forth, and having a fancy for the rooms at the private hotel, to which he had originally gone, he again waited on the landlady. On entering, he addressed her in fluent French, explained his wishes, &c. The landlady, meanwhile, with upraised arms, and an air of utter amazement, exclaimed, "Voilà, un miracle! You cannot be the same gentleman that called here a month ago, and could not speak a single word of French!" "The same notwithstanding." So he took the rooms and stopped there. He worked hard at morbid anatomy, &c. for an entire year in Paris. From La Belle France he went through Switzerland, &

foot, to Italy. At Florence, a tempting proposal was made to him by Dr. Thomas. He offered Dr. Hope a gratuitous introduction to Lord Burghersh and his practice. His books showed receipts to the amount of £1000. or £1100. per annum, and there was no opposition worth considering. This income in Florence was equal to two or three times the amount in London. Dr. Hope, however, was not to be diverted by any thing from the mark on which he had kept his eye steadily fixed, namely, London. To England, then, he returned in June, 1824, and paid a visit to his father who, on parting with him, gave him this advice :—

*First*,—Never keep a patient ill longer than you can possibly help.

*Secondly*,—Never take a fee to which you do not feel yourself to be justly entitled to. And,

*Thirdly*,—Always *pry* for your patients.

A short time before his death, Dr. Hope said that these maxims had been the rule of his conduct, and that he could testify to their success.

In December, 1828, Dr. Hope passed the College of Physicians of London, as a Licentiate, and took a house in Lower Seymour-street, where he remained till his death. He seems to have thought this a mistake, for, he was now of *Oxford-street*.

Dr. Hope was now settled in London, without friends or connexions, to assist him. He was ambitious and sought professional reputation. With this view he assigned to himself the execution of the two works which he had long planned; *viz.* A Treatise on Diseases of the Heart, and a complete work on Morbid Anatomy, illustrated by plates: and for the completion of these works he allotted seven years. To bring out the one was difficult, from the expense; to complete the other was more difficult, from the intricacy of the subject. Dr. Hope now selected St. George's Hospital, as the scene of continued study. He hoped too for a future appointment. In 1831, he was elected physician to the Marylebone Infirmary, an office worth £500. a year. Dr. Hope had now found friends—what he wanted was patients. The following anecdote may illustrate the difference between them. A gentleman, an old friend of Mrs. Hope's family, lived for several years within three doors of him, but never dreamt of trusting his life into the hands of a young man like Dr. Hope. This gentleman having been taken dangerously ill at Glasgow, was recommended by his medical adviser (Dr. Hannay, we believe) to come to town, in order to consult Dr. Hope. "What," said the old gentleman, "you do not mean the man next-door to whom I have lived so many years?"

Dr. Hope's experience led him to these conclusions—that an early marriage is far from a certain means of getting patients—that giving dinners before you can afford them is a more sure way of spending money than obtaining practice—that *dashing* is folly, if it is not ruin—and that envy pursues success.

Soon after this, Dr. Hope married, (may we add, a most amiable and accomplished lady)—he brought out his work on the heart—and resigned, in 1831, the office of physician to the Marylebone Infirmary, having been asked by the new vestry out of the salary that had belonged to it.

In the course of the summer of 1832, he persuaded Messrs. Whittaker & Co. to undertake the publication of the Morbid Anatomy on terms which experience had taught him to consider very advantageous. These

were, that he was to provide all the drawings and lithography, and they were to be at the expense of the printing and the colouring of the plates. After having paid all their own expenses, Messrs. Whittaker agreed to divide the profits with him. After the lapse of three years Dr. Hope received between £60. and £70. for his share, a sum which would not even have remunerated him for the expense of the lithography, had he been compelled to employ a regular artist for its execution. In the Autumn of 1832, he delivered about five-and-twenty lectures at his own house, and commanded a regular attendance of from thirty to forty, which, considering that they were all practitioners, was more than he could have expected.

An observation of Dr. Holland's to Dr. Hope is a good one. At the close of the first year, Dr. Holland kindly inquired how he was getting on. Dr. Hope answered in cheerful terms, and mentioned how much he had made. "It does not signify," answered Dr. Holland, "how much or how little you have made; but what connexions have you formed, and what hold are you gaining on your patients' confidence?" Dr. Hope found the truth of this. Some families that he attended went or died off, his practice diminished, and the third year of his residence in London, that which preceded the publication of the Treatise on Diseases of the Heart, he made a smaller sum than at any other period. He then saw more than ever what must be the uncertain nature of every practice which rests solely on private connexions. From the publication of his work on Diseases of the Heart until his death, his practice steadily increased.

In November, 1834, Dr. Hope was elected assistant-physician to St. George's Hospital. Scarcely six years, says his biographer, had elapsed since Dr. Hope arrived in London with but one acquaintance, and since he had marked out for himself a path of high ambition and hard labour. He had allotted seven years for the accomplishment of that portion which depended on his own industry; but in five years and a half his work was completed, and his books were published. In a few months more he had attained the objects of his ambition.

From this time Dr. Hope relaxed a little in his habits of work. He had previously overdone it. He now restricted his labours to the ordinary working hours of mankind, going to bed at ten o'clock, and rising between seven and eight. He seldom departed from this rule during the remainder of his life, and on such occasions, eleven o'clock or midnight was the extreme limit of his vigils. Between 1832 and 1839, he collected the materials of the third edition of his Treatise on Diseases of the Heart. He used always to keep on his table a copy of the first edition, into which were bound a few blank leaves. On these, on the margins of the printed pages, and on loose scraps which he fastened in, he scribbled the most abbreviated notes of any new idea which occurred to him, and references to the cases illustrative of it. From these notes, which were written at broken intervals of time, and were scarcely perceived to occupy him even by those who lived in his house, he made such additions to the third edition that he may almost be said to have composed the work anew.

Dr. Hope's labours at St. George's, in his attendance on the out-patients, were most anxious, for their numbers were great, and his attention to them conscientious. He lectured too at the hospital on Forensic Me-



cine, a task undertaken for the benefit of the School, not from predilection. In the Spring of 1836 he assumed the lectureship on the practice of physic, at the Aldersgate Street School of Medicine. He was eminently successful. He held this appointment three years, and resigned it in 1839, when he was elected physician to St. George's Hospital.

We may introduce the following as an instance of the sentiment of duty and genuine benevolence which always actuated Dr. Hope. He would often spend the night in the house of a patient who was dangerously ill. These attentions were not confined to the rich. There was a gentleman of large fortune whose dying bed he had thus soothed, and whose family avowed their deep obligations to him. Grateful as they were for that kindness to which the rich are so accustomed, that they almost deem it their prerogative, they were much surprised some time after to find almost similar attentions lavished on a groom, who was seized with a dangerous complaint, requiring almost constant watching.

Up to May, 1836, Dr. Hope had never laboured under any symptoms of affection of the chest. In that month, when he had begun to find his duties at St. George's too laborious, he had a slight cough and pain in his side, which yielded immediately to a blister, and he considered himself entirely re-established. Unhappily, this was not the case. The disease which was to remove him from the scene of his professional exertions and utility had taken root. In September, 1838, Sir James Clark recommended his going abroad, but it was impossible. On the 19th of June, 1839, Dr. Chambers resigned the office of Physician to St. George's Hospital. Dr. Hope, then Assistant-Physician, was opposed by Dr. Williams, in his canvass for the office of Physician. The shock, the anxiety brought on hæmoptisis on that night, and his health broke up altogether. Dr. Hope's was not the mind to dread death, nor his the conduct to make death dreadful. He looked on it as a certainty, and prepared for it with calmness, nay, with pleasure.

"One day he met Dr. Chambers in consultation at the house of a patient, and having alluded to his approaching death, Dr. Chambers kindly answered 'that he ought not to despond, for that he would be quite well yet.' Dr. Hope stopped him, with an assurance that he needed not to be thus cheered, for that he was well aware of his condition; that, besides, the nature of Dr. Chambers' communication was not cheering, for he should be sorry to be detained long from his heavenly inheritance, and to exchange its prospect for the toils of his profession." 261.

In February, 1841, he retired from practice. On the 14th of May he died. Before his death, he was in the receipt of £1000. a year from his practice, an earnest of success of the highest order, had his life been spared.

It is impossible for any one to peruse the life of Dr. Hope without rising from the page with admiration and love for the man. Of unwearied industry, great mental powers, of the purest moral feeling, of the most sincere religious faith, an accomplished physician, an exemplary member of society, he filled his allotted station an example to other men, and, we trust, his spirit reposes with his God.

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A TREATISE ON THE NATURE, CAUSES, AND TREATMENT OF ERYSIPELAS. BY *Thomas Nunneley*, Lecturer on Anatomy, Physiology, and Pathology, in the Leeds School of Medicine, &c. 8vo. pp. 307. London, John Churchill; Leeds, J. Y. Knight.

THE principal object of Mr. Nunneley's book is to establish a class of erysipelatous inflammations, and to bring under this general head affections that have received very different names, and by many are considered totally different things. He remarks in his preface, "the word phlegmon has for long been generally employed as applicable to inflammations of various textures; and, in the same manner, the word erysipelas is now employed, as indicating a contrary condition or type, from phlegmon. If the term phlegmonous inflammation be allowed, he sees no reason why that of erysipelatous should not also be permitted. Indeed, it has already, by more than one writer, been so employed." He adds—"If decided opinions are expressed as to the intimate connection and relationship between the several affections mentioned, and that in nature they are the same as that spreading inflammation of the dermis, which is commonly denominated erysipelas, the author hopes the facts and arguments advanced in support of such opinions, will be thought, if not as convincing to others as to himself, at least sufficient to prevent the charge of advancing an unsupported hypothesis."

The affections that he places in the erysipelatous group are:—

I.—ERYTHEMA, with its various species according to the classifications of Willan, Bateman, and Rayer; except the erythema intertrigo, fret, or erosion of the skin, which certainly has no relation to their other species of erythema. It is purely a local affection, produced solely by local irritants, wholly unconnected with constitutional symptoms, and not requiring constitutional remedies. It is also doubtful if erythema nodosum should be included: the local affection appears to be inflammation of the periosteum; the skin being only secondarily involved. How far the constitutional tendency and symptoms may approach to those attending erysipeloid affections is not quite certain.

II.—ERYSIPELAS; in the forms commonly described under the term, whether of the head and face, trunk or extremities, idiopathic or sympathetic.

III.—DIFFUSE INFLAMMATION OF THE CELLULAR MEMBRANE; as the term is used by Dr. Duncan, Jun. who first most distinctly called attention to this form of complaint.

IV.—PUERPERAL FEVER.

V.—DIFFUSE INFLAMMATION OF THE SEROUS MEMBRANES; which is perhaps more frequently seen in the peritoneum; especially after wounds of it or in its neighbourhood, as after the operation for strangulated hernia or stone.

VI.—DIFFUSE INFLAMMATION OF THE MUCOUS MEMBRANES; this form is more frequently seen about the fauces, as in some forms of angina pharyngea vel laryngea.

VII.—Very possibly some forms of ARACHNITIS belong to this class.

VIII.—DIFFUSE PHLEBITIS, and also this form of inflammation of the ABSORBENTS.

We would take the liberty of observing that whatever the truth, there cannot be said to be novelty in this view. Erysipelatous inflammation has become a household word in the profession, and not only tinctures our language but directly influences our practice. Nay, we believe that most well-informed persons include in the class of erysipelatous inflammations just the very affections that Mr. Nunneley has enumerated. While we cannot, then, acquiesce in the originality of this view, we are quite prepared to admit its truth, and we perfectly agree with Mr. Nunneley that any injuries of precisely the same nature, and in the same situation, which in one person shall induce a limited local action—phlegmon, either without much constitutional disturbance, or, if attended by general symptoms, they will be such as are indicative of power, in which depletants are not only borne, but are highly necessary, shall in another person, or even in the same at another time, induce a local action in which there is considerable tendency to spread far and wide—diffuse inflammation or erysipelas, in which the constitutional symptoms are those of great action with little power, and where depletants are not only not indicated but are positively injurious. Farther, that these different states may arise without external injury, in which the local action may be exhibited upon the surface of the body, or be thrown upon an internal membrane, according as there may be some peculiar determinating cause in the part itself, or elsewhere.

Mr. Nunneley treats, in succession, of Erythema, Diffuse Inflammation of the Cellular Tissue, Puerperal Fever, Diffuse Inflammation of the Peritoneum and Pleura, Diffuse Inflammation of the Mucous Membrane, Diffuse Inflammation of the Arachnoid Membrane, Diffuse Inflammation of the Veins and Lymphatics.

Speaking of *Diffuse Cellular Inflammation*, Mr. Nunneley examines, of course, a very interesting and much mooted question; whether that form which follows dissection-wounds is the consequence of a specific poison or not. He observes :—

“From the fact of such serious consequences so much more frequently following wounds received in the examination of fresh bodies, than of those where putrefaction has already occurred, it might be supposed to depend upon some peculiar poison, generated during the course of the disease which has destroyed the person, did we not sometimes see the same effects follow clean flesh wounds, punctures, fractures, or bruises, and even occurring spontaneously.\* While,

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\* “The following quotation from Dr. Carswell’s Article on Mortification affords a strong support to what is advanced in the text.—‘It is difficult to say how far wounds received in dissection, or in the inspection of dead bodies, and which are followed by diffuse erysipelatous and gangrenous inflammation, depend on the presence of a septic agent developed during the progress of disease, or after death; one thing is certain, that the frequency and severity of the disease which follows such wounds have, so far as we can perceive, no connection with the ordinary changes of the solids and fluids produced by putrefaction; for the results of our own experience are in accordance with the generally received opinion,

however, this prevents us from at once adopting the idea of any such specific poison as will always induce the same disease as that by which the poison itself was originally produced, and which disease can only be so generated; there are a great number of facts to show that the serous or semi-purulent matter thrown out during erysipelatous inflammation, and especially of the peritoneum, as shown in puerperal fever, has a much greater tendency to induce diffuse cellular inflammation, than any other kind of matter. But even this will not at all times, and under all circumstances, act in this manner. Much depends upon the state of health and constitution of the person inoculated; for, beyond all doubt, scores of anatomists are wounded in precisely the same manner, under precisely analogous circumstances, so far as the dead body is concerned, and altogether escape ill effects; and the same person may escape with impunity for a long series of years, and yet ultimately fall a sacrifice, as the case of Mr. Dease illustrates." 46.

It has always appeared to us, that they who argue questions of this kind are apt to lose sight of the consideration, *that* in order for a specific morbid poison to act upon a person exposed to its influence, it is necessary that the recipient should be in a certain state, or predisposed to it. We find this to be the case with syphilis, the exanthemata, typhus. The amount of predisposition requisite appears to vary greatly in different diseases. In some, as syphilis, it is slight, so that most persons exposed to its influence would suffer from it—in others, as typhus, it is considerable, so that few submitted to its influence become affected by it. If this be true, and we have no doubt of it, the circumstance of many anatomists pricking their fingers with impunity does not prove that they are not subjected to the operation of a poisonous matter; while the number of bad cases from dissection of bodies in a certain state, *does* prove that the matter applied exerts some operation independently of the condition of the individual that it is applied to. That the state of the individual is the most important element in the matter is evident, for it is when a season is drawing to its close, and students are suffering in health, that cases of dissection-wounds are usually observed.

Passing on to *diffuse arachnitis*, we may cite Mr. Nunneley's notice of it. Certain it is, says he, that like the other serous membranes, the arachnoid is subject to the development of two forms of inflammation. In the one, there is intense excitement; a full, or more commonly, a hard incompressible pulse, frequent, but not excessively accelerated; and all the symptoms, both general and local, partake much of the nature of acute phlegmonous inflammation, as it occurs in other serous membranes, and require the same active depletion by bleeding and other antiphlogistic measures. In the other, the delirium is not attended with the same ungovernable excitement; there is a depression of the mental powers; the mind is rendered dull; in the former it is rather a perversion than a loss of mind; the pulse is rapid, neither full nor hard, or at least, if full not hard, but generally with a short hurried beat, which may easily be com-

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that it most frequently occurs after wounds received in the examination of recent bodies, and also in the bodies of those who have died of inflammatory effusions into the serous cavities."—*Cyclopædia of Practical Medicine*, vol. iii. page 146."

pressed; and all the secretions are more deranged than in the former case,—especially the abdominal. In the former kind of inflammation the secretions are often suppressed, rather than excessively perverted, in the latter the perversion is the more prominent of the two; indeed, vomiting and diarrhœa are frequent accompaniments. The inflammation is much diffused, the effusion is more widely spread in the sub-arachnoid cellular tissue or pia mater, and it is of a sero-purulent nature. There is in the phlegmonous form, intense pain in the head, morbid sensibility to light, a contracted pupil, and much heat of the scalp; in the erysipeloid inflammation none of these are the usual prominent symptoms. The kind of persons and constitutions in which one or other of the forms appear, are marked by the same signs as point out predisposition to the development in other tissues of one or other form of complaint.

Alluding to the secondary deposits of pus which follow injuries of the head, Mr. Nunneley assures us that he is inclined to believe they will never, or rarely, be found to follow accidents to the head, unless preceded by diffused arachnitis; whether there may not also be phlebitis, and whether this latter be caused by the former, or the former by it, is not material, on account of the connexion between erysipelas and inflammation of the veins.

When treating of the causes of erysipelas, Mr. Nunneley refers to some facts illustrative of the influence of season and weather in its production. Out of thirty-eight cases which occurred in 1837, in the Dreadnought Hospital Ship, twenty-seven happened in the months of February, March, April,—September, October, and November, while in December and January only four cases occurred, the number of patients being greater during the Winter months, and in July and August only two. Perhaps of the two seasons, Spring and Autumn, more cases occur in the former, but the worst and most fatal in the latter. The effect of sudden change of the weather is forcibly instanced in the following fact:—In January, 1832, the weather for some time had been very open; on the 13th it suddenly changed, the wind blowing from the north-east, and very cold. On the following morning, three men who had wounds were seized with erysipelas, of which two died. One was in Luke's Ward, and two in Cornelius's Ward, Guy's Hospital, in neither of which had there been any cases of erysipelas for some time previously.

The constitution of the atmosphere which gives rise to the epidemic is not circumscribed to a very narrow limit, since it is rare for the disease to prevail exclusively in one hospital alone, though it may, from many causes, be more rife in one than in others. In Paris, in the Spring of last year (184 ), erysipelas prevailed, not only in the various hospitals but also in the city. The same has been observed at Edinburgh, (when Dr. Duncan's cases of diffuse inflammation of the cellular membrane occurred), at Dublin, at Birmingham, and at Devonport, when Dr. Butter's cases of irritative fever prevailed.

Mr. Nunneley takes up the question whether erysipelas is or is not infectious. He argues, very justly, that it is. But perhaps the most interesting point is the relation of two cases of inoculation. One of them will sufficiently illustrate the fact. Mary Glisby was admitted an out-patient under his care as dresser at Guy's Hospital, in August, 1831.

She had an indolent bubo in the groin, which, after being seen two or three times, was dressed with red precipitate. In going home afterwards to Deptford, she got very wet: erysipelas appeared round the bubo, and spread over a large surface of the integuments. During this time her sister, who was in the habit of washing and dressing the sore, cut the thumb of the right hand: she took no precaution, but on the same day and almost immediately afterwards, washed the erysipelatous sore as usual. Within a few hours afterwards the cut inflamed and became very painful, and from it erysipelas spread over the whole arm.

*The Treatment of Erysipelas* is very elaborately considered by our author. After quoting authorities on the subject of *Venesection*, authorities of the most diametrically opposite description, he arrives at this conclusion:—"On the whole we must conclude that erysipelas is not one of those disorders for the cure of which venesection should form a prominent part of the treatment, and if not practised within a few days after the commencement of the attack, ought not, except under very extreme circumstances, to be practised at all; and I believe there are few cases in which the patient does not recover much sooner if general bleeding has not been practised than where it has. Bleeding is especially adapted for those disorders where it is of importance to produce an immediate effect upon the system, not only by the removal of a large quantity of the circulating fluids, but by the present and direct influence the sudden abstraction of the blood has upon the nervous system. Erysipelas is not a disorder of this kind, it cannot be removed in this way, and in the great proportion of cases, the fluids may be sufficiently, and much more naturally, removed in other ways." Our own experience has been town experience, and we must confess that the case in which bleeding has been called for or proved serviceable has not yet presented itself before us. And without dogmatically affirming one thing or the other, we cannot avoid entertaining a doubt whether venesection can be really required in erysipelas, be it in country or town. The very character of the inflammation does appear to us to be, *à priori*, opposed to very lowering remedies.

On the subject of *tonics* and *stimulants* we are much disposed to coincide with Mr. Nunnely, for we suspect that there has been as much extravagance on the part of the advocates of bark as on that of the patrons of bleeding. Mr. Nunneley observes:—"I can conceive of very few cases in which bark in any of its forms, or indeed any tonic or stimulant, can be proper at the onset of the disease, at least in adults; but it would seem, from the success attending the practice when the complaint occurs in infants, as well as from the symptoms sometimes manifested in these powerless beings, that even from the very commencement of the attack, bark or some of its preparations, especially quinine, ought to be largely administered. The symptoms which are usually present in the early stages of erysipelatous inflammation are such as are opposed to the administration of tonics, the irritable condition of the alimentary canal is such, that remedies of this class are decidedly contra-indicated; besides, there is not, with very few exceptions, at the commencement of erysipelas,

such debility as to demand support, and there can be little doubt, as has been stated by Carmichael Smyth, that the administering of bark and wine at too early a stage of the disorder, has a great tendency to produce that very condition of putridity and gangrene which it is so much wished to prevent. So long as there is any considerable nausea and vomiting, it is impossible that these remedies can bestow any real power; bark and tonics only overload the stomach and add to its disorder, while wine and stimulants increase the headache and general irritation; but so soon as the tongue becomes clean and the stomach quiet, they certainly have a great effect in restoring the vigour of this organ.

"More commonly stimulants can be much earlier used and with more advantage than tonics, and especially stimulants of a diffusible kind, of which ammonia is certainly the best, as it appears to rouse and give energy to the nervous system, without acting upon the vascular, at least by increasing its excitement. At a later stage, when the tongue becomes dark or glazed, or the pulse weak and feeble, and the strength failing, then wine may be given with great advantage, in large quantities, or there may be substituted for it, with singularly good effect, the accustomed beverage of the patient, as porter or gin, the latter of which Sir A. Cooper speaks of in high terms. I think it will generally be found that these stimulants are of decided use, provided the tip and edges of the tongue are moist and not covered with sordes, however much the base and middle are loaded, but when the tongue is completely dry they either are not well borne, or are rejected,—a state in which turpentine may sometimes be most usefully employed instead." 222.

These *eclectic* sentiments will be found, we apprehend, not to stray wide of the truth. At the same time we believe that there are times and cases where diffusible stimulants are required even from the earliest stage—we allude to the erysypelas of the cachectic and sometimes of the aged. To wait for a certain period, or until the tongue puts on a certain state, will in such cases be sometimes found to wait too long, and to sacrifice what little chance there may otherwise have been.

We cannot shut the volume before us, without recommending it to our medical friends. It contains much information, and is marked by much good sense. The practitioner will find in it that which will stand him in stead in practice.

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# STATISTICAL REPORTS OF THE HEALTH OF THE NAVY, FOR THE YEARS 1830—6 INCLUSIVE.

## EAST INDIA COMMAND.

IN our last number we gave an account of the Cape and African Command. We now proceed to that of the East Indies. This is a command of vast extent, embracing upwards of 70 degrees of latitude, and 100 of longitude—extending from the tropic of Cancer to New Holland, &c. and bounded on the North by the Isthmus of Suez. Still the operation of our ships is chiefly directed to the shores of the bay of Bengal—the coast of Malabar—and the Island of Ceylon. The Eastern Isles, and China, now occupy many of our ships. The station may be considered as, in a large proportion, intertropical.

Affections of the alimentary canal including cholera, are the most frequent, and also the most fatal. Next to these are hepatic diseases—"in many instances closely connected with the former." These hepatic affections, though they do not occasion so much mortality on the station, yet induce a great deal of invaliding, and thus keep up a constant drain on the force. They are designated as "inflammatory, acute, or chronic," in the nosological returns; though the terms are often improperly employed. Idiopathic fever, of an endemic character, does hold a very prominent rank in the catalogue,

"It is an interesting question, to the solution of which little, in effect, has yet been contributed, why one disease, or class of diseases, prevails in one place, and another, in another. Why, for example, is dysentery, not fever, the most fatal disease of the East? Why, on the West coast of Africa, and at Jamaica, is there little mortality from any disease but fever? And, why is the fever different in the two places? Why, on the other hand, is there no epidemic, and little endemic disease on the coast of Brazil! the maladies which occur there being the effect of simple atmospheric action, errors in diet, exercise, and the abuse, or improper application of what the ancients quaintly called 'non-naturals.' It must be clear, to the most superficial observation, that the attempts, where attempts have been made, to explain these, and similar results, have entirely failed." 78.

## 1830.

The mean force of the year 1830 was 1,621, dispersed in 14 vessels—4 frigates and 10 smaller vessels. The total number of sick and hurt was 2,520—at the high rate of 1,548 to the 1,000. The succeeding ratios, however, indicating the *results* of diseases and accidents, are not high, when intertropical service is considered. 86 cases were sent to hospitals—25 were invalided—and 29 died, 19 on board ship, and 10 in hospitals—or about 18 in the thousand. The total loss to the squadron was about 33 per 1,000—little more than one-third of the loss on the Cape and African station, in the same year.

Under the head of "Idiopathic fevers," 174 cases were treated, of which number, nine were sent to hospital, and three were invalided for the sequelæ of fever. In a great majority of cases the fever was very slight and transitory. They were divided into 108 of continued—18 of



remittent—and 48 of intermittent fever. Six of the first class were sent to hospital, and one invalided. Of the second class (remittents) 3 were sent to hospital—and of the third class (intermittents) 1 was invalided. No case terminated fatally at sea, and one only in hospital. Thus 162 cases were cured at sea—and 8 in hospital—total loss from fever in the squadron being 4—3 invalided, and 1 death.

In the *Crocodile*, soon after anchoring in the roads of Batavia, on her way from Australia to India, 17 cases of remittent fever broke out *simultaneously!* It was in the month of August—the days excessively hot—the nights damp and chilly. None died; but it is evident that emanations from the shore were the chief agents in this outbreak, aided, no doubt, by atmospheric vicissitudes.

“Inflammation with fever” was an order of diseases, more numerous and important; because, in the nosological returns, it included hepatic affections. The numerical amount is swelled by including all inflammations of external parts, however trifling. There were 707 cases this year in the squadron, of which 28 were sent to hospital—14 were invalided—and seven died. There were 49 cases of inflammation of the lungs, 3 went to hospital, and one died. There were 78 cases of inflammation of the liver. 11 were sent to hospital—6 were invalided—and 5 died, 4 on board and 1 in hospital. Hepatic disease, though so prevalent in India as to be called the “endemic” of the country, is yet not so fatal as disease of the alimentary canal. No case of phthisis was noted in the year. Of 184 cases of dysentery, 11 died. Three out of 5 cases of cholera proved fatal.

There were 26 cases of scurvy—now a rare disease in the navy. They occurred in two vessels employed on the west coast of Australia. For a considerable time the ships’ companies had had little fresh meat or vegetables. *They had lemon-juice in abundance.* When fresh meat and vegetables were procured, the disease vanished.

#### 1831.

The ratio of mortality this year was low—about 13 in the thousand men—though the ratio of sickness was very high. The ratio of invaliding was enormous—viz. about 60 in the thousand. The mean numerical force this year was 1,523—the number of sick and hurt 2,549—or 1,673 for every thousand. There were 20 cases of cholera, 6 of which were fatal on board. Two were sent to hospital. Four of the fatal cases were in the *Cruizer*, on her passage from India to Swan River. They had all the same characters, but happened at long intervals, and under different circumstances. The first case happened at Bombay, in May. The second on the 12th of July—the third and fourth on the 26th of July—and the fifth on the 8th of August. This was a curious specimen of a contagious disease.

Passing over 1832, we shall dwell for a moment on

#### 1833.

In the *UNDAUNTED*, frigate, there were 98 cases of cholera, and eight *ths.* The ship had come from the Cape of Good Hope, in high *lth*, and had been 14 days in Madras roads when the cholera burst

forth—ran its course—and terminated in 11 days. “The surgeon gives a negative opinion as to its possessing contagious qualities.” The remaining years present nothing particular, except a progressive decrease of mortality.

In the whole seven years there were only 39 deaths from FEVER—or, about three in the thousand per annum of men employed. On the South American Station, the rate of mortality from FEVER, however, was only one in the thousand per annum, of force on service!!

Let us now glance at the “HOME and VARIOUS” Station. The home force is divided into two classes—vessels that remain permanently on the home station—and those which are sent with despatches abroad, and return almost immediately. The vital statistics here, are somewhat complicated. The remarkably salutary influence of “change of air,” or of climate, will appear from the following passage.

“During the year 1830, the ships on the ‘Home’ station were highly healthy; those employed ‘Variously’ were, however, greatly more so; it may rather be said that they enjoyed a singular immunity from fatal disease. There is something surprising in the amount of difference, especially when the nature of the various employments is considered.” 149.

“The most important result, viz. of proportionate mortality in each, is very remarkable. As has been stated, it is low in both, singularly so in the force employed ‘Variously.’ In the ships constantly on Home stations, it is, from all causes, in the ratio of 8·7 per 1,000 of strength; from disease, independent of external causes, 6 per 1,000. But, in ships employed ‘Variously,’ the rate of dying from all causes, is 6·4, and from disease no more than 3·4 per 1,000 of strength; being little more than half that sustained by the ‘Home’ class, and so low, however, and by whatever law tried, as to render it almost doubtful of belief, could there be any doubt, as to the means by which it has been determined.” 150.

Thus the ratio of mortality in ships employed in harbours and about the coasts at home, is nearly double that which occurs in ships employed occasionally in traversing the ocean with despatches.\*

The ships on the Home Station, during the seven years alluded to, suffered less from idiopathic fever than any other division of the naval force. The average number attacked was 51 in 1,000—the average of deaths was 1 in 1,188 of the force annually. In the “VARIOUS” force, the ratio of attacks was higher, viz. 60 in the 1,000, and the average of deaths was nearly double that of the HOME Service. The latter is a little higher than on the South American Station—a little lower than in the Mediterranean—and about half that of the East Indies.

But the following table will show that the ratio of sickness, as well as of mortality, was less in the East Indies, considerably, than at home!

	Attacked per 1,000 of Force.				Died per 1,000 of Force.			
East Indies	..	..	..	2.9	..	..	..	1.2
Home	..	..	..	4.1	..	..	..	1.4

\* This applied to the year 1830; but on the whole aggregate of the seven years, the “Various” did not maintain this superiority. The ratio of sickness in both classes was about the same.

	Attacked per 1,000 of Force.	Died per 1,000 of Force.
South America . . . . .	3.2	1.5
Africa . . . . .	3.4	1.5
Various . . . . .	4.2	1.6
West Indies and North America . . . . .	4.8	1.9
Mediterranean . . . . .	5.1	1.9

From this view, it appears that the mortality was least in the East Indian, greatest in the West Indian and North American, and Mediterranean, force; but the loss in the greatest, being under 2 per 1,000 annually of the employed, is not heavy, when compared with that sustained by many other portions of society at corresponding ages. Although the proportion of mortality in the West Indian and North American, and Mediterranean, commands, was the same, the proportion of attacks in the latter preponderated; it therefore appears, that the latter division of cruising ground is the least favourable of any to consumptive disease: for, besides the greater frequency, there was also a larger proportion of invaliding. As a part of the invaliding was from 'Home' hospitals, it may be assumed that some of the subjects so disposed of eventually died, without any means of tracing them. The East Indian was evidently the most favourable, the proportion of invalided, as well as of attacked and dead, being lowest: While that station is shown to be so favourable in respect of consumption, inflammation of the lungs, and other diseases of the respiratory organs, it is much the most unfavourable in those of alimentation." 208.

We must now dismiss this important volume, being unable to notice the numerous and valuable tables with which it is filled. We return our best thanks to the compiler of these Statistical Reports, as well as to the Physician-General of the Navy, under whose auspices and inspection they have been constructed.

RECHERCHES CLINIQUES SUR LE DIAGNOSTE, L'ETIOLOGIE, LA CURABILITE, &c., DE LA PREMIERE PERIODE DE LA PHTHISIE PULMONAIRE.

Clinical Researches on the Diagnosis, Etiology, Curability, &c. of the first Stage of Pulmonary Phthisis. By M. Jules Fournet, M.D. Paris.

[Second Part.]

In a preceding number of this Journal we presented the reader with an analysis of the first part of this work. In the second part, of which we are now about to give an outline, the author applies the principles established in the first part to the detection of pulmonary phthisis in its first stage—in that stage, in fact, in which, according to the ordinary modes of investigation, not the slightest suspicion could be entertained of the presence of tubercular deposition. The second and third stages of phthisis were the only ones studied or known in Laennec's time; that accurate observer candidly acknowledged, that he was unable to detect the presence of small crude tubercles, how numerous soever they might be. The uni-

versal failure of the resources of art in the treatment of phthisis in its second and third stages, first induced our author to devote his energies and transfer all his efforts to establish a diagnosis of the disease in its first and earliest stage. He adduces the testimony of Andral with respect to the precision and exactness with which he was able to announce tubercular infiltration at its very commencement, at a stage in which the actual state of science would not enable an observer even to suspect the presence of tubercle. The principal object of this second part is then the exposition of the means of diagnosing the first stage of phthisis. These means, the author tells us, he sought even in the etiology of the disease, and fairly enough, in as much as the existence of the cause is a further reason for suspecting the presence of the effects. Thus he interrogates successively the circumstances of constitution, of hereditary predisposition, of age, sex, menstruation, pregnancy, previous diseases of the respiratory system, as well as of the other systems, habitation, diet, profession, season, climate, &c. ; all for the purpose of ascertaining the degree of influence, remote or proximate, of these circumstances on the development of phthisis. After the signs which may be derived from the consideration of the causes, he then passes in review the signs which may be obtained from an examination of a respiratory and other systems. With respect to the first of these systems, he examines in succession the signs afforded by the stethoscope, percussion, aconophony, palpation, inspection by the expectoration, the peculiar sensations of the patient, and the exact seat of the several physical signs. Next comes the analysis of the general phenomena ; then the varieties sometimes presented by the different orders of facts just mentioned. After having considered these separately, for the purpose of more easily tracing their especial characters, he then examines their value, when combined. Next he considers the course of the first stage of phthisis, and its division into three phases or epochs, to each of which corresponds a certain number of signs. He then notes the relations existing between symptomatology and pathological anatomy, the numerous relations with respect to the moment when the first symptoms appeared, the course of the disease, the different forms which it may assume, and the degrees in which it presents itself ; important relations, which, when we ascend to the first manifestation of the symptoms and the lesions, tend to show what order of symptoms, local or general, appears first, and whether the disease is primarily, local or general. After these several considerations, which make known the course of the affection during its first period, and which place the observer in an advantageous position with respect to treatment, comes the differential diagnosis of the first stage of phthisis. He concludes by laying down the general data on which the treatment of this first stage of the disease should be founded, and developing the erroneousness of the opinion, which holds as a principle the incurability of phthisis in its first degree, and the frequent cure of it in its third stage : a fatal error which tends to destroy the spirit of investigation, and deprives science and humanity even of the idea of opposing the evil, and causes the physician to allow the only moments to pass by when the combined influence of nature and art may be able to effect something, and reserves our hopes for a period, when death alone is to be expected. Such is the plan of this second part of our author's work, embracing nearly the entire history of the first stage of pulmonary phthisis.

In order to obtain signs from the constitution, with respect to the diagnosis of phthisis, he considers the several structures of the body; as the osseous, muscular, cutaneous, dental, ungual and nervous structures; we shall state the results.

The greater or less development of the chest does not seem to him as closely connected, as is generally supposed, with tuberculization of the lungs; he concludes that, out of a given number of phthisical patients, about one-third have the chest well developed.

With respect to the muscular system, he finds in the list of his phthisical patients several athletic individuals; a much greater proportion than is generally supposed. Out of a given number nearly one-third have the muscular system *ordinarily* developed.

When questioned with respect to their state of em-bon-point before the commencement of their illness, the greater number of his patients have stated, either that they were very fat, or at least in tolerably good condition. In about three-fourths of his phthisical patients the skin was observed to be extremely fair, fine and delicate. With respect to the hair very few had it fair; the greater number had it of a brown colour, and some had it even of a jet black. He was particular in observing the nails and fingers of his patients: and by no means considers these parts as affording such diagnostic signs as they are supposed to do. He infers from his tables, that the fusiform or *Hippocratic* fingers, considered by some as so strikingly characteristic of phthisis, are more frequently found in persons not presenting the slightest trace of tubercular disease. The peculiar appearance of the teeth he considers of no value in diagnosing phthisis. The intellectual and sensorial faculties presented at least the ordinary rate of development. In a word, the weak constitution and lymphatic temperament are the states most frequently found by him in his phthisical patients; not however the extremely weak or extremely lymphatic temperament, but those of the common or ordinary form. The coincidence of a strong, muscular constitution, of a well-developed and well-formed skeleton, and of a sanguineous temperament, with pulmonary phthisis, is much more frequent than is generally supposed. The number of patients so conditioned form about one-third of the entire; this result is somewhat different from what is generally admitted; it is probably owing to the circumstances under which his cases were taken; these circumstances were such that the number of cases of hereditary phthisis were considerably less than that of acquired or accidental phthisis, and it is well known that debility of constitution belongs much more to the first than to the second of these two forms of phthisis.

The number of cases of phthisis, independent of any predisposition derived from hereditary transmission and constitution, arising merely under the influence of certain anti-hygienic conditions is much greater, according to our author's experience than is generally believed. This fact concurs with the preceding in explaining the rather frequent coincidence of pulmonary phthisis with a strong muscular constitution and a sanguineous temperament.

The conclusion which he draws from all this is, that the constitution of the patient, considered separately, is an almost valueless element in solving the problem of the diagnosis of the first stage of pulmonary phthisis, ex-

cepting, however, those cases where the suspicion of phthisis should happen to coincide with the more marked forms of the lymphatic temperament, cases rather rare in adults, but much more so in persons of a more advanced age. But if the consideration of the individual's constitution is connected with certain other circumstances favourable or unfavourable to the opinion of phthisis, it may acquire a confirmatory value, or one of a merely additive nature. Thus the coincidence of a strong constitution and a sanguineous temperament with the absence of the anti-hygienic conditions capable of developing phthisis should make us reject the already conceived suspicion of the existence of phthisis; whilst this isolated fact, (a strong constitution and a sanguine temperament) cannot decide the question, either affirmatively, or negatively. In children the consideration of the constitution is of much more value.

The author well remarks that all he has said on the constitution, is referrible to the primary characters of the constitution of the patients, and not to the changes which their constitution may have undergone in consequence of the development of their phthisis.

*On Hereditary Transmission.*—According to our author, and indeed according to the experience of all pathologists, both ancient and modern, the hereditary transmission of phthisis cannot be called in question. Our author has studied the subject of hereditary transmission with respect to the father, mother, brothers, and sisters of his patients. The principal results of his investigations have been, that the absence of phthisis in the immediate relatives of a patient is not a sufficient reason for excluding the idea of it in the patient himself. Patients he often observed to die phthisical, who, when subjected to a strict examination with respect to the health of their parents and friends, always denied the existence of any symptoms of phthisis in them; their parents, in fact, were still living and in good health, or if they were dead, they died of some disease altogether different from phthisis. The patients in question had become phthisical under the influence of certain anti-hygienic circumstances, personally confined to themselves. Now if a well conducted examination ascertained the absence of phthisis, past or present, in the father and mother of any given patient, and the absence in this patient of the anti-hygienic circumstances just mentioned, there would exist the strongest grounds for rejecting the suspicion of phthisis; yet, under certain circumstances, very rare to be sure, phthisis is observed to become developed, independently of all influence of hereditary transmission, or indeed of any appreciable cause.

For the reasons above assigned, if there existed no probability of phthisis in the father and mother, and if a brother or sister died phthisical under the influence of anti-hygienic circumstances, such a precedent should not at all influence the judgment of the physician on the patient in question, inasmuch as the influence of these circumstances was entirely personal.

On this part of the subject a question may be raised; namely, whether, *cæteris paribus*, acquired, or, as we may call it, accidental phthisis, does not attack certain constitutions in preference to others, or even exclusively; secondly, whether, in case of an affirmative answer being given to the

preceding question, there is a sufficient similitude in the organization of children of the same parents to warrant the physician in apprehending or dreading in one of them the phthisis which has developed itself in the other under the influence of anti-hygienic circumstances. The conclusions to which our author's experience has led him, on this question is, that—1st, it does not appear probable that accidental phthisis requires for its development certain constitutional conditions—2nd, that it is possible that the anti-hygienic circumstances capable of developing phthisis act more effectively and more rapidly on certain constitutions than on others; but, as a general rule, there is not sufficient uniformity in the organization of infants of the same parents, to enable one to conclude, the same anti-hygienic circumstances being given, either that they will produce, or that they have already produced in the one the same effects as they had produced in the other. Certain professions are considered as predisposing to phthisis; in countries where these professions are in vogue, several members of one and the same family are employed at the same kind of work; now, in such cases, some are observed to become phthisical, others not so. In fact, the conclusion which our author draws from his experience on this matter is; that any phthisis, developed in a family under the influence of anti-hygienic circumstances, setting aside altogether the influence of hereditary taint, remains a personal fact, confined to the individual so affected, and that no consequence can be drawn from it for the other children of the same family.

Acquired phthisis may become developed even at an advanced period of life. It recognizes in this respect no other law save the anti-hygienic conditions, which develop it. A father, born of healthy parents, his children, now full grown; he experiences reverses of fortune, and in order to satisfy the wants of his family and the education of his children, he is forced suddenly to change the tranquil and easy life which he hitherto enjoyed, for a life of privations, anxiety and annoyances. His health, heretofore good, becomes changed from day to day, and in a little time he dies of acute phthisis. At a post-mortem his lungs are found pervaded with miliary tubercles. Now, under such circumstances, the health of the father does not at all compromise that of the children, and consequently no comparison can be instituted between the nature of the disease which has carried off the father and that of the disease now affecting one of the children.

The vast importance of the question regarding the hereditary transmissibility of phthisis makes us dwell longer on this portion of our author's work than we otherwise should do. His remarks on this subject are very pertinent, and very practical. He well remarks that children may have been conceived subsequently to the manifestation of an organic process of acquired phthisis in one of the parents. What will be the result, he asks, of this in comparison with the influence of predispositions to hereditary phthisis? The conclusion to which his experience brings him, is; that the hereditary influence, to which children are subjected who are born of tubercular parents, is less when the phthisis of which the parents have died, was acquired, than when it was a family inheritance for themselves. Phthisis, then, in its first generation should be less dangerous in its hereditary transmission, than phthisis in its second generation.

Being given a family consisting of several children, the one of the two heads of which, or even both, have died of phthisis, the hereditary influence which the children receive, may manifest itself in several different ways, and such manifestation appears not to be subjected to any established law. This influence sometimes appears to exhaust itself on some one of the children; but when the family is large, such influence is seen to extend to several of its members. It generally happens that some members of the family are exempted from the baneful influence which seems to exhaust itself on the others, and they are observed to enjoy very good health. It rarely happens that all the children born of a consumptive father or mother die of phthisis. But as it is impossible to judge at what limit the effects of the tubercular predisposition will stop, and what will be the number of its victims, the physician should always entertain the greatest apprehensions regarding a patient, which excites suspicions of pulmonary phthisis, and who has lost a father or mother of this disease, or some of his brothers or sisters.

With respect to the influence of age in the production of phthisis, our author remarks that the disease may be developed at all ages; we have sufficient proof to satisfy us that it may become developed even in old age. Our author states that he has frequently found tubercles in the lungs of old persons, 60 or 70 years of age; these tubercles were crude in some and softened in others. The age however cannot furnish us with any sure aid in diagnosing the presence of phthisis.

With respect to the assistance to be derived from the manner in which the uterine functions are performed in the diagnosis of phthisis in its first stage, our author states that it is impossible to derive any useful data for this diagnosis from such a source; and for this he assigns a very good reason: namely, that the derangements of menstruation which generally accompany phthisis, are an effect and not a cause of the organic process which is going on in the lungs and in the rest of the system; that this process does not re-act on the uterine functions, until a period when the local and general sufficiently establish the diagnosis; lastly, that these derangements of the uterine functions are subject to too much irregularity in their appearance, and may be produced by too many different causes, to allow any one to establish any precise connexion between them and the process of pulmonary tuberculization.

Our author next considers the diseases from which the patient suffered as diagnostic signs; and first, the diseases unconnected with the respiratory system. He comes to the conclusion that the diseases of the cutaneous and mucous systems are those which appear most frequently in phthisical cases, and to be most immediately connected with tuberculization of the lungs, and the general tubercular cachexy. He next considers how far diseases of the respiratory system influence the development of phthisis; and he commences with bronchitis. The conclusion to which he comes on its influence, a conclusion perfectly in accordance with the opinions of Andral and Louis, is, that in some patients the catarrhal affections observed are effects of the tubercular cachectic state, or of tuberculization already existing; and that in others they are the exciting cause of phthisis to which their constitution and hereditary circumstances predispose them; they are sometimes the signal that the organic process which had hitherto



lain dormant, or had been insidious and imperceptible in its course, has now commenced. With respect to the influence of pneumonia in producing tubercular disease, his opinion is that it is an affection wholly independent of tuberculization of the lungs, and that it is not related to it either as an exciting cause, or as an effect of the irritation produced by the presence of tubercles in the lungs: so that the consideration of its previous existence or non-existence can be of no use in the diagnosis of the first stage of pulmonary phthisis. The same thing he thinks cannot be said of pleuritis, which under certain circumstances may act as a determining cause of phthisis. The conclusions to which his experience leads him, are:—1st, that the passing of pleuritis into the chronic state should not necessarily make us suppose the existence of tubercular deposition on the side where it occurs;—2nd, that from it, if this fact happens to an individual, who evinces no signs whatever of a predisposition to pulmonary phthisis, and who has been suddenly surprized, in the midst of ordinary good health, by an attack of pleurisy which has come on under the influence of causes more or less appreciable, and which has passed into the chronic state in consequence of the imprudence of the patient, there may be a certainty that no tubercles pre-existed. 3d, But that if this state continues, and lasts for a considerable time, and if the patient's health evinces a tendency to become deteriorated, and if besides this we ascertain by the ordinary signs the existence of a false membrane around the lungs, there will be good reason to fear or even to suspect tubercular deposition in such false membrane as well as in the subjacent lung; 4, whilst we may have an almost absolute certainty of it, if we observe the strength gradually to diminish, and that some general symptoms of hectic fever come on without any other cause capable of accounting for them. With the exception of the case just mentioned our author conceives that pleuritis, like bronchitis, may, according to circumstances, become an exciting cause of tubercular deposition to which the patient is already predisposed, or be only the effect of tuberculization already existing. In the latter case we generally see it appear without any known cause, then disappear and return within a very short space of time. With respect to hæmoptysis our author has not observed it as frequently as the accounts of some authors would lead one to suppose. This however may probably be owing to this circumstance, viz. that a considerable number of his cases bear only on the first stage of phthisis, a period of the disease at which the hæmoptysis which serves to mark its progress has not yet appeared. Our author concludes that the number of patients in whom hæmoptysis may enter as an element in the diagnosis of the first stage of phthisis is much more limited than one would be led to believe from the accounts of some authors, and as it is far from being easy to distinguish, within the limits of the first stage of phthisis, whether the hæmoptysis is connected with the existence of tubercles in the lungs, or with other morbid states, such as diseases of the heart, &c. it follows that the importance of hæmoptysis as a means of diagnosing the first stage of phthisis is proportionally diminished. Yet as the attacks of hæmoptysis connected with the existence of tubercles are infinitely more numerous than those depending on any other cause, and as certain circumstances may assist in distinguishing to what morbid

conditions they belong, we may attach considerable importance to the consideration of this element of diagnosis.

We next come to the consideration of active sanguineous congestion of the lungs, and of hæmoptysis, as causes of tuberculization. In order to determine in what sense and within what limits these are connected with the ætiological history of phthisis, he lays it down as an established fact, that neither the one or the other has the power of producing this disease, but so far as there exists a predisposition, either congenital or acquired, to tuberculous formation; that their action is confined merely to calling this predisposition into play, and to directing its development to the organs in which they themselves are seated, and to rendering more or less rapid, and more or less intense, the morbid movements connected with the tuberculous cachexy. Clinical facts prove that hæmoptysical attacks, considered as signs of the first stage of phthisis, assume a peculiar character of severity, when they coincide with a delicate frame, a lymphatic temperament, a narrow chest, pale and flabby flesh, a certain flush of the cheeks, and with the circumstance of parents who died phthisical; because, in these cases, they are most commonly or almost always, connected with the existence of phthisis.

This influence of pulmonary congestion and hæmorrhage being acknowledged, may be accounted for in two ways. On the one hand, it may be supposed that they both have the effect—1st, of directing to the lung those morbid movements which the tuberculous cachexy brings with it, from which movements the process of tuberculization and the deposition of tuberculous matter in the substance of the lung result; 2nd, or else of provoking new tubercular formations, and of accelerating the progress of those already existing, when the localization of the morbid process is already effected. On the other hand, in cases of hæmoptysis, whether tubercles already exist, or not, it may be supposed that they extravasated blood, on condition that a predisposition to tuberculous formations exists, furnishes itself the materials of tubercle, as happens in the case of different other morbid productions. In the first case, the predisposition to tubercles would only have been evoked, localized, and excited in its effects; in the second case, the hæmorrhage would have concurred more directly in producing these effects by furnishing the materials. Our author considers at great length the comparative value of these two opinions, and concludes by stating, that active sanguineous congestions of the lungs and hæmoptysis, provided a predisposition to tuberculous formations exists, have a tendency to direct to and concentrate on the lungs the deposition of tubercle; and when it is once established, they have a tendency to perpetuate and accelerate it.

Our author next considers the diagnostic signs derivable from the anti-hygienic conditions in which the patient may be placed. As there is nothing very novel, however, in this part of his work, we shall pass on to the diagnostic signs furnished by the examination of the respiratory system. And first for the auscultation of the respiration.

1. *The Modifications produced in the Inspiratory Murmur.*—In the first period of pulmonary phthisis, these modifications of the inspiratory murmur are:—an increase of intensity, by which this murmur rises from 10

to 12, 15, or 18.\* This increase is rather constant. It increases in a ratio directly proportional to the physical alteration of the organ. Next a diminution in the duration, occurring simultaneously with the increase in the intensity, but which is less constant and less marked. It depresses the inspiratory murmur from 10 to 8, 7, or even to 6 or 5, but very rarely below this. It sometimes happens that the intensity and duration of the inspiratory murmur do not undergo any appreciable change: in this case it retains its normal representative number, and the expiratory murmur is almost the only one changed.

The same, however, cannot be said of the changes produced in the soft, dry, humid character; in fact, in the first stage of pulmonary phthisis, the inspiratory murmur is observed to be dry, hard, rough and as it were difficult to be produced. The impression which the ear receives from it is quite peculiar. If we auscult the anterior part of the chest from below upwards in a patient labouring under the commencement of phthisis in the apex of the lungs, we shall be struck, we cannot fail to be struck, with the successive transition from the soft, easy, mellow character of the inspiratory murmur to the character of roughness and dryness, which it presents towards the summits. This character increases perceptibly, according as the tubercular infiltration increases. It can no longer be perceived as soon as the changes of quality have attacked the inspiratory murmur.

*2. Modification in the Expiratory Murmur.*—The expiratory murmur uniformly presents, in the first stage of phthisis, an increase both of intensity and duration, an increase which may raise it from 2 to 20. This increase takes place by successive gradations to 4, 6, 8, 10, &c. The numbers representing it are, in general, a tolerably exact measure of the progress of the disease. The law which regulates the increase in the duration and intensity of the expiratory murmur is, according to our author, very constant, such increase not being subject, like certain other modifications of the normal sounds, to occasional disappearance; it is continued and regular in its ascending course; and affects uniformly and simultaneously both the duration and intensity of the expiratory murmur; sometimes, however, it affects the intensity but little, but it affects the duration much more. This circumstance might lead one into error, if he were not well practised in distinguishing in the murmur under examination the duration from the intensity. In the exceptional case just alluded to, the expiratory murmur remains weak enough; but the ear easily distinguishes that it is more prolonged than in the normal state. Even when the bronchial character has come to attach itself to the expiratory murmur, it may still be shown that the new murmur resulting from it is more developed than if it had been affected by an alteration in its quality, without a previous increase in its intensity and duration. It must not, however, be forgotten that these changes of quality, when they affect any

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\* In the first part of this work, the representative number of the healthy inspiratory murmur was stated to be 10, that of the healthy expiratory murmur being two.—(Rev.)

murmur whatever, have the effect of making it appear a little increased in intensity and duration, that thenceforward the appreciation of these two characters should, in order to be exact, be made before the time when the sounds of inspiration or expiration are attacked by changes of quality.

The character of roughness, difficulty, and of dryness, belong to the expiratory as well as to the inspiratory murmur. It is, in general, so much the more perceptible according as the increase of the expiratory murmur is more marked. It becomes inappreciable, when the changes of quality have come to affect this murmur. The changes of quality are of very great importance in the diagnosis of the first stage of phthisis. Though appearing at a somewhat later period than the preceding signs, they manifest themselves with sufficient frequency to warrant the observer in being influenced in his treatment by the diagnosis they furnish. These changes are regulated by constant laws, applicable to all patients and all forms of phthisis. They are sufficiently clear and distinct to be easily appreciated by any person conversant with the practice of auscultation.

The alteration of *quality* in the respiratory murmurs, setting out from the time of their first appearance to the time when they have attained their maximum of intensity, pass through successive gradations which express accurately the increasing progress of the disease. They consist at first merely in a *souffle* a little *clearer* than the natural *souffle* of inspiration or expiration; they pass from this to the *resonant, blowing*, and then the bronchial quality. This bronchial first exists in a *first* degree, then passes on to the *second* and *third* degrees, and ultimately assumes the *cavernous* or *amphoric* character, according to the extent of the cavity formed within the pulmonary tissue. Such are the successive gradations which the quality of the inspiratory and expiratory murmurs may pass through in the course of phthisis. When they have attained the bronchial character, these changes of quality still belong to the first stage of phthisis; beyond this, they belong to the subsequent stages of the disease. However we must not infer the non-existence of cavities from the absence of the cavernous and amphoric characters; for it sometimes happens that, in certain anatomical conditions of the diseased structures, the bronchial character in the second or third degree, which exists in a part close to the ear, obscures or altogether effaces a slight degree of cavernous character seated in the central portions of the lung.

The modifications occurring in the quality of the respiratory sounds have the uniformly constant character of appearing first in the expiratory murmur, and of not extending to the inspiratory murmur till a later period. Thus, during a certain portion of the first stage of pulmonary phthisis, the expiration alone presents changes of quality; it is not till a subsequent period that the same modification appears in the inspiration. Thus we have, in this part, a sure means of judging the progress of the disease. We may even go farther in this judgment regarding the progress of the disease: by a law just as constant as the preceding, the changes of quality retain in the expiration a greater development than in the inspiration, as long as we are in the first degrees of the scale of gradations: then they lose successively this pre-eminence in the expiration, according as the last degrees of this scale become developed. Thus the

clear souffle, the resonant and blowing qualities, and the bronchial character in its different degrees, always appear more marked in the expiration than in the inspiration. Thus we already hear the blowing quality and the bronchial character during the first of these two murmurs, at the time that the clear souffle and the resonant quality have scarcely appeared in the second; whilst, according as the last stages of pulmonary phthisis become developed, we find the inspiratory and expiratory murmurs affected more and more equally, by the cavernous and amphoric characters.

Taking a rapid survey of the modifications produced in the respiratory murmurs in the first stage of pulmonary phthisis, we see that the modifications of the expiratory murmur are much more important for diagnosis than those of the inspiratory murmur, and above all they possess the advantage of being referred to a much earlier period of the disease. The modifications in the duration and intensity of the respiratory murmurs appertain to a period of phthisis antecedent to the time when the changes in the soft, easy, mellow character, and the alterations of quality are observed; the alterations in the duration and intensity of the expiration, the alterations in the quality of the two murmurs, have a diagnostic value much greater than the modifications of the inspiratory murmur, and than the dry, hard, and difficult character of the two murmurs. The changes of quality form a continued chain, which embraces in its extent the most considerable portion of pulmonary phthisis. The hard, rough, dry character belongs more especially to the first period of phthisis; for it ceases to be appreciable as soon as the changes of quality have affected the respiratory sounds.

Such then is the aggregate of the signs furnished by auscultation of the respiration in the first stage of phthisis. We find that our analysis has now run to such a length that we must defer our further notice of this interesting work to some future time. Before, however, we close our present notice, we beg leave to correct an erroneous impression which M. Fournet seems to lie under; he seems to think that he was the first person who distinguished the respiratory murmur into the inspiratory and expiratory. Not to mention several physicians of our acquaintance, we beg to refer the reader to Schill's *Semeiology*,\* § 332, an analysis of which appeared a long time since in this Journal: where he says, "In the normal state the sound of inspiration exceeds that of expiration as well in duration, as distinctness and audibility.—A deviation from these relations is a sign of disease."

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\* Translated by Spillan, London, 1839.

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CRIMINAL JURISPRUDENCE CONSIDERED IN RELATION TO MENTAL ORGANIZATION. By *M. B. Sampson*. Octavo, in double columns, pp. 30. Highly, Fleet Street. 1842.

THESE letters, six in number, were originally published in the *Spectator*; but are now collected into a pamphlet, and sold at the cheap price of sixpence, not with the view to profit, but to the extensive dissemination of the principles, which the author maintains. This code of criminal jurisprudence is founded mainly on phrenology, and on that account will create a prejudice in the minds of many well-meaning persons, as tending to Materialism, and contrary to the doctrines of Christianity. But as the laws under which we live are framed entirely for the punishment of crimes in this world, and have no reference whatever to rewards or punishments in a future state of existence, people of the most tender or scrupulous conscience may examine the principles in these letters as bearing on criminal jurisprudence, and cull from them such hints as may appear to be founded on just reasoning, or drawn from authentic facts.

The author sets out by taking it for granted, and as an unquestionable truth, that "all the *manifestations* of the mind, including the feelings and the passions, are dependent on the formation and state of health of its material instrument the brain." This, must, we think, be granted, since it is impossible that the soul can manifest itself, except through the instrumentality of matter. The next proposition is, that diseases or disorders of the cerebral *structure* will give rise to functional disorders of the mind's organ, and consequently of the mental manifestations. We fear that every close observer will see too much truth in this second proposition; for not only cerebral, but hepatic, gastric, and intestinal disorders or irritations will disturb or even completely destroy, for a time, the *healthy* manifestations of the mind.

"The question then arises, why do we not treat irregularities of the mind in the same way as we treat all other physical disorders, *viz.* by confining ourselves solely to an attempt to cure the patient; and why do we talk of punishment when we are considering a case of morbid action of the brain, any more than when we are considering a case of morbid action of the heart, the lungs, or any other organ?" 5.

The great difficulty is to define the limit between sanity, with responsibility, and insanity, with irresponsibility. What renders the difficulty greater is the fact that, there is scarcely a human being in this world in whom "*all* the qualities of mind and body are healthfully constituted and harmoniously developed." This tallies with religion and daily observation; but some come much nearer the standard of perfection than others.

"The tendency to evil, which, more or less, is the characteristic of all men, indicates in each the amount of this divergence from that harmonious balance of the mental powers in which alone true soundness of mind can consist. False impressions, ungovernable desires, deficiencies of intellect or feeling—in short, all that makes up the sum of human errors—arises from an unbalanced action of the various faculties of the mind; and to the extent, therefore, that any one faculty is deficient in its comparative relation to the others in any individual

such is the extent of his departure from true soundness of mind in regard to those objects to which that faculty may relate." 6.

Thus if the tendency to acquire property is not greater than the tendency towards benevolence, conscientiousness, &c., the property will be fairly acquired in accordance with justice and humanity; but if the tendency in question be inordinate, he will endeavour to acquire property by all means, whether just or unjust. Now as the perfect type is no where to be found in mankind, how are we to estimate the amount of departure from that type? The author proposes a rule for that purpose. He considers obedience to the laws of his country as a test of sanity.

"Although, therefore, it may be asserted that, in the eye of perfection, there exists no human mind in its right state, yet so long as an individual infringes no general law or habit of society, he may be considered as coming up to the average point of civilization, and may therefore be regarded as perfectly sane." 6.

It is probable that we shall not be able to find a more practical rule than the above. But still we fear there must be admitted a kind of neutral ground between this standard and unequivocal insanity—on which stand the innumerable *eccentricities*, both of opinion and action, which break no law or ordinance of society, yet appear as obliquities of intellect. This neutral ground is denied by the author.

"Irregularities of disposition arise from two causes,—viz. the transmission of an irregular cerebral organization from parent to child; and, subsequently, the effect of accidental circumstances, as bad example, ill-conducted education, injuries of the head, &c. It is precisely from analogous causes that irregular conditions are occasioned in other organs of the body. They are more or less, in all cases, transmitted in an imperfect and unhealthy state; and the subsequent effect of defective physical education and accidents aggravates the predisposition to morbid action which was thus originally established. If a child is born with an irregular organization of brain (and to say that every child is born thus, is merely to aver that none are born perfect,) he comes into the world to the extent of that irregularity insane; and as, by subsequent education, that irregularity may be reduced or increased, so will this insanity be aggravated or relieved." 6.

We are much more inclined to agree with Dr. A. Combe in the following sentiment.

"Many men in the full enjoyment of health are remarkable for peculiarities of character and idiosyncracies of thought and feeling which contrast strongly with the general tone and usages of society; but they are not on that account to be held as insane, because the singularity for which they are distinguished is with them a *natural* quality. *It is the prolonged departure, without an adequate external cause, from the state of feeling and modes of thinking usual to the individual when in health, that is the true feature of disorder of mind.*" 7.

No doubt this definition is not free from objections and difficulties; but no definition of sanity or insanity will ever be free from them.

It will be a long time before the world comes to the conclusion that "the frame of mind which leads to criminal acts should invariably be attributed to a *derangement* of the mental organs, or to a defect in their structure."

Admitting that this was physiologically and psychologically true,—admitting that a person can no more resist the impulse to crime than he can the impetus of a bullet from a cannon's mouth—what are we to do with a Daniel Good—what ought we to have done with Greenacre and Courvoisier? Allowing them to have been insane, and that they could not resist the evil impulse, they ought not to have been punished. But confinement itself is punishment, and to that we must resort, in order to protect society from murderers and robberies. We do not advocate the punishment of *death* for any crime—even for murder—but the punishment which effectually secures the public, and gives the culprit (if that term may be applied) the best chance of being reclaimed—namely, confinement or hard labour, with privation of all comforts—and, *à fortiori*, of all pleasures. The following passage is ingenious “special pleading” in the physiological court.

“When a man commits a crime, it is the custom to exclaim that ‘he *ought* to have known better.’ Now, if he was from natural deficiency of the reasoning or moral powers, unable to perceive that he was doing wrong, it cannot be disputed that he was of unsound or partially idiotic mind. If, on the other hand, he did possess the power to perceive the right course, and yet was unable to act up to his conviction, it is evident that he possessed a brain of such an irregular formation, that the higher mental powers bore no sufficient relation to the lower propensities which it is their duty to control; and that the latter, when roused by the presentment of their own stimuli, possessed a strength so disproportionate as completely to overpower the former. If, while in this state, he commits a crime, he will exclaim that ‘he could not help it,’ or that the Devil (i. e. the cerebral organ of the offending propensity) was too strong for him. His judgment, in fact, was strong enough, under ordinary circumstances, to teach him the erroneous tendency of his passions: but it was not strong enough to prevent his falling, when those passions, always disposed to disproportionate action, became suddenly excited by some external cause. In such cases, the mental balance is completely lost, and he is reduced to a state of relative insanity. Under these circumstances, the ‘responsibility’ which attaches to the result of his conduct should be (and under the operation of the Divine laws certainly is) shared by those who, being too ignorant to estimate the nature of his infirmity, suffered the exciting causes to be placed in his way, instead of endeavouring to repress the activity of the overruling propensity by withholding the objects of temptation, and by appealing to his higher but hitherto neglected powers.” 8.

Mr. Sampson goes on to aver that there is no merit in good actions, nor culpability in bad ones—both being the result of organization, which was not in the choice or power of either party. The author quotes a passage from the writings of the celebrated Jeremy Taylor, the great ornament of the church, which certainly tends much to uphold his argument, however revolting it may appear to our feelings.

“If a man be exalted by reason of any excellence in his soul, he may please to remember that *all souls are equal*; and their differing operations are because their *instrument* is in better tune, and their body is more healthful or better tempered; which is no more praise to him than it is that he was born in Italy. On the other hand, if his course entitles him to no reward in this world beyond the natural one of the inevitable happiness of mind which Heaven has decreed to be the consequence of its *physical health*, so it is but fair to allow



that the opposite course can merit no punishment beyond the inevitable pain which Heaven has decreed to be the consequence of its *physical* derangement." 6.

It must be obvious to every impartial reader that a more completely phrenological doctrine than the above is not to be found in the writings of Gall, Spurzheim, Combe, or Sampson. But we apprehend that His Reverence went rather farther than he intended in the foregoing passage. If virtue and vice—if good and bad actions—have neither rewards nor punishments in this world, *because* they flow inevitably and irresistibly from organization, how can we believe that the omniscient and benevolent Author of our existence should punish or reward us for "deeds done in the flesh," seeing that we had no more control over those deeds than we had over the motions and revolutions of the heavenly bodies in the firmament? And again;—if there be no rewards or punishments in a future state, of what use or to what purpose can a future state be? It can have no relation to a *preceding* state of existence, and therefore, if it take place at all, it must, to all intents and purposes, be a new creation, and totally unconnected with this, our mundane being! These are serious, but inevitable conclusions from the tenets of Jeremy Taylor.

An era, indeed, may come, when our descendants may be prepared for such doctrines, and when they will look back with pity and contempt on the superstitious fears and hopes with which the minds of their forefathers were filled respecting an immortality—a heaven and a hell—a paradise and a purgatory—that existed only in the reveries of imagination! This era, however, is not yet come; and, if we can trust to appearances, it is a long way off. We cannot, therefore, congratulate Jeremy Taylor, or our present author on any prospects of success in the propagation of their doctrines—at least in the present century.

In our author's second letter, he brings forward several cases of suicidal and homicidal monomania—in which the destructive propensity was so strong that the individuals were quite unable to resist, and, in many instances, desired to be secured, lest they committed the act, which they knew to be criminal, though their reason was unable to quell the impulse. Such cases are familiar to all medical practitioners, and form strong arguments in support of Phrenology, or the plurality of organs in the brain.

Our author observes, that one organ may grow larger than it ought naturally to be, by an over-supply of nutriment—a kind of hypertrophy, with a "permanent increase of sanguiferous circulation in the region of the organ." This again may lead to structural change in the part, and incurable insanity. In recent cases, there is seldom change of structure, but only increase of vascularity in the part, especially under excitement.

"If a person is under the slightest excitement, nay, under the mere operation of any ordinary feeling, an increased supply of blood for its manifestation is required and sent to its organ in the brain. If the emotion increases, the supply of blood to its organ must have increased in a due proportion, and so on, until *it* becomes so great as to carry it to a state of blind excitement that may to overpower all other emotions, and eventually even lead it to act without ledge of the intellect, or the concurrence of the other feelings." 9.

Some curious examples are given, where very trifling irritations, such as a person treading on the toes of a man in this condition, have led to the most fatal actions.

The following passage is very sensible.

"He, who neglects the laws of health, by exposing himself, say to a sudden and violent change of atmosphere, and has thereby produced a pulmonary affection, has to submit to the restraint of confinement at home, or to a temporary exile in a warmer climate, to remedy the evil effects of his disobedience; or if, by incautiously venturing into an impure air, he has contracted an infectious fever, and he should, nevertheless, refuse to take measures for his recovery, it would be the duty of society, both to themselves and to him, forcibly to remove him to a better atmosphere, to keep him secluded from all to whom there might be danger of his communicating the disease, and to enforce the administration of proper remedies. In like manner, if he offends against the moral laws from hereditary disposition, and the contagion of bad example, or from any other cause, it becomes the duty of society to remove him from the source of contagion, and from the means of transferring it to others; to repress the unhealthy tendency of the mind, and to stimulate its deficient organs.

But although religion, justice, and benevolence, point to this as the chief, nay, the only duty which should be regarded by society in the treatment of offenders, it is one which, in the blind and popular eagerness for the infliction of 'punishment,' is almost invariably lost sight of; and, as a natural and inevitable consequence of this neglect, details of the most disastrous kind are day by day forced upon our attention." 13.

The great difficulty is to ascertain the point at which mental aberration may render restraint necessary. Thus a man evincing an inordinate love of gambling, by which his family may be ruined, and himself brought to a state of suicidal determination, is in as much need of restraint as he who evinces a disposition to murder by sticking pins through flies, or hanging mice, for the pleasure of witnessing their dying agonies! But the present temper of society would not bear that a man should be put into a lunatic asylum for gambling. Where would the doctrine end? There are a thousand ways of gambling. Mining speculations, joint-stock companies, &c. &c. &c. by which thousands are daily ruined, might be brought under the law and doctrine in question. The following position is reasonable.

"In dangerous cases, where a mitigation cannot be effected to the requisite extent, so long, indeed, as there exists cause of apprehension of bad results from the disordered person holding communication with others—it must always be necessary to keep him in a state of seclusion apart from temptation. This will obviate the objection that my views would leave all men to follow their inclinations. Punishment from man is not necessary; when a patient is suffering from fever, we do not attempt to 'punish' him, but we keep him in seclusion from all but his medical attendants (who run little risk of infection), and we oppose his irrational desires, control his actions, and if necessary, perform painful operations." 15.

The fourth letter goes more into practical detail than general speculation or theory.

At the Eastern State Penitentiary of Pennsylvania, the following plan, which we greatly abridge, has been adopted. The convict, on his entrance, is washed, clothed, and conducted blindfold to his cell, where he remains

locked up, and abandoned to that solitary anguish and remorse which follows the commission of crime.

When labour is employed, it is not as a punishment, but as an alleviation of his sentence. The want of occupation in solitude produces a feeling of tedium and irksomeness, that is relieved by labour, which then becomes an enjoyment—which, by association, continues after the convict has left his asylum.

Persons duly qualified are employed to teach the convicts trades and avocations, as well as religion and morality. The prohibition of intercourse with society is not entirely enforced—but only amongst the convicts themselves, so that they can neither impart nor imbibe contamination. It is said that this system has worked better, and produced more salutary results than any other. The following passage is worthy of extraction.

"It will be seen, from what I have stated, that so far from being the advocate of a sentimental humanity, which turns with horror from the contemplation of that law of the Creator by which pain is rendered consequent upon misconduct, I advocate a *severer* system than that which at present obtains, since I assert that the most severe pain which can be inflicted upon any offender, is precisely that pain which results from a philosophical treatment for his cure. It is a treatment which the patient would ever afterwards remember with mingled feelings of gratitude and terror—gratitude for the improvement which it has wrought upon his nature, and terror at the remembrance of the prolonged and bitter struggle by which that improvement was attended. The difference between the system which I advocate, and that which is at present in force (if the vague and contradictory treatment of offenders, which is now practised, can be called a system), is simply this, that I advocate a discipline which should benevolently produce great pain at first, with the view of preventing much greater pain, which must otherwise inevitably be endured for the future; while at present we revengefully inflict pain in a lesser degree, which is productive of little future benefit to the sufferer—leaving, indeed, his disorder generally unmitigated, and oftentimes increased." 18.

In respect to capital punishment, the opinion is daily increasing, that it is unnatural, and inefficient, even for murder. What is it but legal murder after all? A man takes away the life of another. Let the example be followed, and let the murderer be hanged. This, no doubt, is the "*lex talionis*," but it is neither merciful to the culprit nor protective to society. It leaves no *locus penitentiae* to the criminal—it renders callous the feelings of the multitudes who flock to the scene of execution—and brutalizes them by familiarizing them with the annihilation of human life. People may quote Scripture about life for life—an eye for an eye—and a tooth for a tooth—but let them adhere to the whole code of "*LEX TALIONIS*," or abandon it entirely. If the great object of punishment for crime be the prevention of its repetition, hanging or decapitation is the worst of all preventives. Allowing, for argument's sake, that a hanging scene produced no other effect than a horror of the crime, and a terror of the punishment: still those impressions are fugitive, and entirely forgotten in a few days. But suppose a Burke, a Greenacre, a Courvoisier, and other culprits were still labouring on the highways, with chains on their limbs, brands on their shoulders, and solitude and ascetic diet in their vacations from toil; these perpetual mementos of turpitude and its consequences would prove infinitely more preventive of crime than the momentary agonies of a wretch

suspended by a rope at the New Drop. Degradation as the act of flogging is to a soldier or sailor, the disgrace of it deters far more from insubordination than the bullet from the mouth of the French musket. There is a kind of honour attached to death from a dozen of balls, whilst the ignominy of 500 lashes, which spares life, leaves a standing warning against the commission of a similar crime.

“The punishment of man consists in the infliction upon him of a treatment which is in opposition to his desires. Pleasure arises from the gratification of his desires; pain is the result when they are offended. If a man desires above all things to gratify the tendency to destroy, which results from the activity of a faculty common to his race, it being at the time in a state of excitement so great as to overmaster the dictates of all his other and higher powers, and to act independently of them, the idea that, in gratifying it, he incurs the risk of self-destruction, is that which of all others would be least distasteful to him. That, under such circumstances he might even contemplate it with pleasure, is shown by the large proportion of cases of murder which are terminated by the suicide of the criminal. The tendency to destroy is one of the blind propensities of man's nature, absolutely necessary to adapt him to his relation to the external world; and, when acting harmoniously with the intellect and moral sentiments, it produces only the most beneficial results; but, when roused to unbalanced action, it exhibits itself in maniacal fury, and, overpowering the reason and the feelings (which it must do before its possessor can commit murder), derives oftentimes as much pleasure from the destruction of its possessor, as from the destruction of any other individual. It gives in its morbid state an inordinate tendency to violent action—a wild desire to overpower restraint of every kind, and to break down and destroy all that comes within its reach. To one, therefore, who is labouring under this feeling, the present sanguinary law acts rather as a stimulant. The only thing that would at all operate with preventive force upon a mind in this state, would be the impression, that, if the organ should be gratified up to the point of homicide, it would subject its possessor to a life of perpetual restraint.” 18.

That execution scenes tend to harden the mind rather than horrify the feelings, may be inferred from a fact stated by Ewart in the House of Commons, namely that, out of 167 persons who had been hanged, in a certain period of time, 164 had been present at executions previously!! The ordinaries of Newgate affirm that it is very rare for any one to suffer at the Old Bailey, who had not been a witness of the sufferings of others at a similar place. When Bishop and Williams were executed, in 1831, the multitude rent the air with their groans and hisses, when the culprits were led forth on the scaffold; but the moment the drop fell, they gave several tremendous cheers! So much for the sight of capital punishments! It cannot be said of hanging or decapitation, that—

“Emollit mores nec sinit esse feros.”

One of the most specious objections to the abolition of capital punishment is the fear that murder might often be added to other crimes—as robbery for instance. But this argument is untenable. The crime of murder should invariably be imprisonment for life, without any exception, whereas other crimes might be open to terminable restraint, according to the nature of the case or the recovery of the culprit from his vicious tendency. This plan would effectually check the wanton addition of murder to robbery or theft.

The 18th of February, 1841, a boy, seven years old, was taken into the hospital, under M. Bonneau.

The child appeared to be of rather a good constitution. He complained merely of slight headache, and some colicky pains, and of diarrhœa—no fever—respiration free and easy. On the following day he complained of considerable soreness of the throat—could breathe only through the mouth, the nose being stopped with thick mucous.

On examining the posterior fauces, redness and swelling of the isthmus faucium was observed, as also a false membrane on the right side of the velum palati, and another on the tonsil of the same side—no swelling of the sub-maxillary glands—the child answers questions, but his voice is slightly changed. Cough hoarse, and already evincing somewhat of the croupal character. Breathing not embarrassed—percussion elicits a clear sound in every part of the chest—the vesicular expansion audible over every part.

(Tartar emetic in warm water—aluminous insufflations—hot cataplasms to the feet.)

20th. The tartar emetic made him vomit several times, and in the matter vomited a false membrane seven or eight lines in length, with four or five in breadth was found; it was thick and hard, and was supposed to be that seen the day before on the right side of the velum; other fragments of false membrane were also found, some white, and others greyish. The child was relieved after discharging these false membranes. The alum insufflations were continued, and the rest of the day passed off very well, but he spent a bad night, and became delirious.

In the morning a remarkable change was observed to have taken place since yesterday—countenance presented a peculiar aspect—it was dejected and pale, with a purple tint on the cheeks—eyes dull, and the upper eyelid evinced a constant tendency to cover the globe of the eye. The pupil, without being either dilated or contracted, retained its natural sensibility. Breathing very difficult, without, however, that laryngo-tracheal whistle so often observed in croup being heard; at each inspiration the *alæ nasi* became very much dilated and the shoulders raised. The lower lip was depressed at each inspiratory movement, and the commissures of the lips were drawn slightly outwards—thirty-two inspirations per minute. The patient, whose intellectual faculties are for the time intact, has still sufficient strength to sit up, and on examining his throat, the false membrane observed the day before on the side of the velum is no longer visible; the place it occupied bleeds a little. The rest of the velum and the uvula are covered with a whitish false membrane of recent formation, and which seems to be very thin. On introducing a spoon into the bottom of the throat, to examine the isthmus faucium, we brought up thick, whitish mucous, mixed with streaks of blood.

Auscultation of the larynx detects a peculiar and very strong sound, which seems to be produced, either by a thick, moveable mucous, or by a floating false membrane, agitated by the air at its entrance into and egress from the air-passages. The respiratory murmur in the chest has no longer the natural softness of the vesicular expansion; it is rough, and, as it were, ill-formed, and the reverberation of the sound formed in the larynx is heard on both sides. The voice is extinct, and the patient

pages of this journal ; still they are not to be sought out with the view of making them the principal point of attraction. From the conviction that nothing is more adverse to the progress of science, than the desire of the marvellous, the editor of the *Clinique des Enfants* repudiates the practice of presenting to his reader's attention nothing but extraordinary exceptions and novelties, feeling that he will render his journal more useful by seizing those delicate shades so frequently met in the ordinary facts of infantile medicine, and which render its practice so very difficult. The importance of studying infantile disease, as a separate branch of medical study, is obvious to every one, who will take the trouble of considering the peculiarities of infantile life.

Every one engaged in the practice of medicine soon finds out the difficulty of arriving at a correct diagnosis in examining children in early life. The organs of relation being then but very imperfectly developed, the medical attendant is in such cases entirely destitute of that valuable information, which he might readily obtain from an adult patient. Another source of difficulty is, that in consequence of the excessive sensibility of the infant, the sympathetic phenomena are very marked, and oftentimes become confounded with the idiopathic symptoms of the disease. We must admit our continental neighbours have the advantage of us, in the numerous facilities they enjoy for studying the diseases of children. Their *Hôpital des Enfants Malades* has nothing at all approaching it in these countries. Such establishments are absolutely and essentially necessary for attaining a knowledge of infantile pathology.

According to the plan of the *Clinique des Enfants*, as given in the introductory chapter, each number is to contain interesting cases of the principal diseases to which children are liable, with practical remarks on them, and also general treatises by the most distinguished professors engaged in the department of infantile medicine on the pathology, therapeutics and hygiene of infants. We shall present our readers with a condensed analysis of the most practical articles of this journal, and in so doing we shall endeavour to adhere to the order in which the several numbers have been published, as far as may be consistent with convenience. A strict adherence to the precise order, however, observed in the original journal, would in many instances occasion a want of connexion, and thereby involve in some obscurity, articles in other respects valuable. We shall commence by giving an analysis of an interesting case of croup, in which it was deemed necessary to have recourse to the operation of laryngo-tracheotomy.

#### CLINIQUE MÉDICALE.

##### *Case of Laryngo-Tracheotomy for Croup, in the Sick Children's Hospital.* By M. A. CONTOUR.

Tracheotomy, as a means of treatment in croup, is too well established in medicinal science by its great success, to have any thing to apprehend from the publication of some few unsuccessful results ; many of which might be attributed to the operation having been too long delayed, and not undertaken until the pathological changes had proceeded too far.

membrane of the body of the velum was more dense and resisting than that of the tonsils and uvula, where it is somewhat soft, and resembles a sort of detritus of a dirty grey colour. This substance covers all the internal surface of the pharynx, as far as the thyroid cartilage, sometimes in the form of well-formed false membranes, varying in size and thickness, sometimes in the form of that species of greyish detritus easily raised with the finger, whilst the truly membranous parts adhere more closely to the subjacent mucous membrane, which is every where injected and presents a bright colour.

The false membrane on the posterior surface of the velum palati ascends into the right nasal fossa, of which it lines the inner surface formed by one of the sides of the septum; but it has this peculiar character, that being thick inferiorly, it diminishes perceptibly according as it ascends, and is very thin in the upper part.

The epiglottis on its anterior and posterior surface, and the larynx through its internal surface, are lined with false membranes of less consistence and thickness than those of the velum palati, but they adhere closely to the mucous membrane. The cordæ vocales are entirely covered, and on viewing the larynx when opened posteriorly, we can neither see the ventricles, nor the projection of the thyro-arytenoid ligaments.

The trachea through its entire length, from the first cartilaginous ring to the bifurcation, is red and very much injected, and there are observed here and there some traces of false membranes. This, however, may be accounted for by the fact of our having had recourse several times, after the operation of tracheotomy, to cleansing out the trachea. The proof, that this was the means of destroying the false membrane, is, that this membrane is found at the bifurcation of the trachea, and it may be traced in the bronchi of the left side as far as the fourth ramifications: no trace can be discovered in the bronchi going to the right lung; these present merely a very marked redness and injection without the least tumefaction. The false membrane of the left bronchi, of a dull white colour and extremely thin, adheres but slightly to the subjacent mucous membrane; according as we advance into the bronchial ramifications, it becomes less formed, and terminates in a number of small white points, deposited in a light transparent tissue.

The two lungs present numerous traces of inflammation. The left lung, more involved than the right, is hepatized over the entire lower half of the upper lobe. In the lower lobe some points of hepatization are observable. The right lung, which is engorged posteriorly, presents in its three lobes a considerable number of circumscribed points of lobular pneumonia in the stage of red hepatization. No trace of pulmonary tubercles. The bronchial glands and the pleura healthy. Heart of the normal size, and its parietes of a natural consistence—no serum in the pericardium—stomach in the normal state.

*Small Intestine.*—Through the entire extent of this intestine the glandulæ solitariae present the appearance of small globular bodies of a dull white colour, but they are neither softened nor ulcerated. Peyer's glands are considerably developed, and present a peculiar appearance; they are nearly all of a violet colour, and the mucous membrane covering

them, without any alteration, either in thickness or consistence, presents sometimes mamillated elevations, some of them with a broad base, others with pedicles, resembling in some degree small mucous polypi; sometimes it presents folds of greater or less regularity which may be compared to the *valvulæ conniventes*—nothing remarkable in the liver, spleen, kidneys, or bladder.

On perusing this case we shall find that croup does not always faithfully follow the course assigned to it in books.

Thus the hoarse cough never even for once came on in kinks; it occurred from time to time, and presented itself under the form of one or two paroxysms followed by a whistling inspiration. The laryngo-tracheal sifflement usually heard at a distance, at each inspiration, did not exist for an instant in the case before us. Delirium and convulsions, two symptoms so rarely observed in such cases, occurred in this case.

This case is also a good instance of those croups in which it is impossible to meet the three stages described by authors, and the course of which is so rapid that the medical treatment has not had time to act. Thus we see the disease commence on the night of the 18th—and on the noon of the 20th, that is, about thirty-two hours after its commencement, the physician was obliged to have recourse to a surgical operation. Probably in those cases where the course is so rapid, valuable time should not be lost in employing means, which, if not always, nearly always, are found powerless, but we should have recourse at once to operation, before the pseudo-membrane has seized on the trachea and bronchi. Indeed this case comes in support of this opinion—accordingly we see that the operation, though practised a few hours after the commencement of the disease, was resorted to at too late a period; for, as the autopsy proved, the false membranes had already extended into the first ramifications of the left bronchi, the pulmonary tissue was already attacked; circumstances which diminished considerably the chances of success.

*CASE.—Bright's Disease after Scarlatina; Anasarca; Albuminous Urine; Edema of the Lungs.*

On the 16th of February, a little girl, four years of age, born of healthy parents, entered the hospital: she had been vaccinated, and was in the habitual enjoyment of very good health, when about a month previously, after several attacks of vomiting accompanied with fever, she was seized on the same day with intense redness of the anterior part of the chest, as also of the back; this was all considered as the result of indigestion, and at the end of a few days she left the hospital. Eight days after some degree of swelling was observed: it commenced in the right hand, extended to the left, to the lower extremities, and then to the face. The mother stated that the child had fever every night, that her urine was very dark, and that she had a little purging. Present state on the 16th.—The child had a very fair skin, was very intelligent, and appeared to be of a strong constitution; face not œdematous; eye-lids not puffed; cheeks rosy; upper and lower extremities tumefied, tense, elastic, do not retain the pressure of the finger: abdomen not tense, nor does it appear to contain any liquid; the respiratory murmur perfectly pure all over the chest; nothing abnormal



elicited by percussion; pulse 80 and regular, not full; heat of skin moderate; appetite good; ordinary thirst. She is very lively, and has the appearance of being in good health. There was very little change in her up to the 24th, her urine still continuing of a deep yellow colour, and nitric acid and heat throwing down a whitish flocculent precipitate. The vapour bath was employed twice, and seemed to have the effect of rendering the urine less albuminous, and of diminishing the tense darkness of the limbs.

24th. During the preceding night she was restless; in the morning her face was a little swollen, and the limbs were increased in size, without, however, retaining the impression of the finger; skin hot; pulse increased in frequency—urine the same as on the preceding days—appetite diminished—during the night she was restless, and towards morning had some bilious vomiting.

25th. At seven in the morning she was seized with intense dyspnoea—œdema perceptibly increased—eye-lids œdematous, and diminish the aperture of the eyes—the left side of the body on which the patient prefers to lie, more infiltrated than the right; pulse small, (160 per minute); breathing very short and rapid (84 per minute); *alæ nasi* widely dilated at each inspiration: pulsations of the heart very rapid, its impulse of considerable strength, the sounds very distinct. A little sub-crepitous râle is heard posteriorly, at the base of the left side of the chest. An attempt was made to bleed her from each arm without success, owing to the great infiltration. She vomited some aperient medicine given to her; and in consequence of the intense dyspnoea, and the increasing œdema, six leeches were applied to the precordial region, but without any improvement. All the symptoms becoming more aggravated, she died on the 26th at six o'clock in the morning.

*Autopsy*, thirty hours after death.—œdema more marked on the left than the right; the back of the left hand, though much infiltrated, scarcely retains the impression of the finger.

*Brain*.—Some drops of transparent serum in the lateral ventricles.

*Ab lomen*.—Liver large, of a very deep brown red; its vessels are gorged with blood.

*Kidneys*.—The left kidney about eight centimetres in length and four and a half in breadth; pale and somewhat yellowish; it presents a small number of whitish granulations externally. When its convex edge is cut into, its mamillæ are observed to form a contrast by their bright red colour, with the pale cortical substance: the latter more especially in the portions separating each mamilla, presents a considerable number of small whitish points about the size of a pin's head; these granulations are irregular, not prominent, and do not appear distinctly separated from the cortical substance. The right kidney, eight centimetres in length and four and a half in breadth, is not so pale as the left, but yet is far from having the normal colour. Its tubular substance, when it is cut into, is redder than that of the organ of the opposite side; the same may be said of the cortical substance interposed between each cone.

*Thoracic Cavity*.—No pleuritic adhesions; nearly a glass of transparent citron-coloured serum effused into the left pleural cavity; only about half

that quantity into the right. A small quantity of serum found in the pericardium.

*Lungs.*—The left very heavy : with the exception of the apex of the upper and lower lobes, the lobules of which are rose-coloured, all this lung presents the colour of wine-lees ; it no longer crepitates, nor does it present the natural vesicular structure ; some portions of this lung, when put into water, sink to the bottom ; they are hard, and easily torn, without, however, presenting that loss of cohesion peculiar to pneumonic hepatization ; when this pulmonary tissue, so changed, is torn, there flows from it a considerable portion of serum, somewhat frothy, reddish, and inodorous. The right lung is much less heavy than the left. No tubercle was found in the lung. The bronchial glands natural.

*Remarks.*—The anasarca of infancy most frequently supervenes on some of the exanths, as scarlatina ; the fever, which sometimes is accompanied by slight redness of the skin, may pass off without being noticed by the child's friends ; when they are interrogated on the subject, as to whether the child has had scarlatina before the anasarca, they answer in the negative ; but if the physician, not content with this reply, questions them regarding the illness of the child a little before the appearance of the dropsy, he often arrives at the knowledge of the cause, which otherwise would have escaped him. We have an instance of this in the case just given : for the child's friends took the commencement of the scarlatina for indigestion. The eruption to be sure, was slight ; but it is well known that there is no relation between the intensity of the eruptive fever and the frequency of the dropsy.

From the existence of the scarlatina having been overlooked, the child left the hospital after a few days ; after this she was exposed to cold, a powerful, though not an indispensable cause of dropsy, as we sometimes see patients attacked with anasarca before they have left their bed. When this child entered the hospital, the anasarca was of three weeks' standing ; the sub-cutaneous cellular tissue, though infiltrated, was resisting and elastic ; skin did not present that bloodless colour so frequently accompanying dropsy ; the urine was constantly albuminous. In this state of things, we were warranted in supposing that the albuminuria depended on Bright's disease. Still so rapid a death was not anticipated.

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We find in the 2nd Number, p. 63, a very interesting Review of a Thesis of Dr. Baron, an intern of the Hôpital des Enfants Malades, of which we shall now give an analysis. The entire of the review of this Thesis extends through the 2nd, 3rd, and fourth numbers of the Journal. The subject of the Thesis is—

*Pleurisy in Children.*—M. Baron considers this affection as it occurs in children from birth to their fifteenth year. Out of 463 autopsies, the author detected traces of pleurisy 159 times, that is, in more than one-third of the entire.

We shall commence our analysis by as rapid a sketch as possible of the ætiology of this affection, as we well know that a knowledge of the causes

of disease may become, especially in doubtful cases, a powerful element of diagnosis, and very frequently a source of valuable indications.

*Physiological Causes.*—1st. Influence of *age*.—Billard tells us that the *fœtus* is not exempt from this disease.

From considerable experience, M. Baron concludes that pleurisy is much more frequent in children from two to fifteen years, than in the first two years of life. In 3,392 autopsies of children from one to two years old, he found 205 indisputable pleurisies, and 79 pleuritic changes which were probably not inflammatory. In 181 autopsies of children from twelve to fifteen years of age, he found 158 pleurisies and 13 pleuritic alterations. With respect to the comparative frequency of pleurisy at the different epochs comprised between birth and the fifteenth year, it sets in more frequently during the first five days, than during the period included between the fifth day and the first month; it diminishes in frequency after the first month up to the second year; from the second to the third year it is much more frequent than from the third to the fourth, and more especially from the fourth to the fifth. It is still more rare during the following years, chiefly between the thirteenth and fourteenth year.

2nd. Influence of *sex*.—It is not till the approaches of puberty, that we commence to appreciate, in most diseases, any modifications depending on sex. With respect to pleurisy, M. Baron has observed it to be somewhat more frequent in males.

3rd. Influence of *constitution* and of *habitual health*.—The greater number of children observed by M. Baron were of a slender and delicate frame; with debility either acquired or hereditary; small size, small limbs, bad diet, want of due care, &c. In some a degree of *marasmus* more or less advanced was observed. *Rickety* malformation of the chest does not seem to exercise much influence, whilst the position in which children are constantly placed may have some influence on the development of pleurisy.

*Pathological Causes.*—Influence of *previous diseases*. The diseases which may become complicated with pleurisy are the following:—1st, *Pleurisy* itself is occasionally observed to return in the form of a relapse, more frequently in subjects in the second infancy, especially in tubercular subjects, than in those of the first; but these relapses, in M. Baron's opinion, seemed to depend rather on the general state, on the constitution of the subject, or on the state of the other organs, more especially of the lung, than on previous pleurisies.—2nd, *Passive pleurisy*, which must be admitted in the case of children as well as *passive pneumonia*, a congestion which manifests itself by the physical signs of pleuritic effusion, without symptoms of inflammatory re-action, may become the cause of pleurisy. 3rd, The influence of *pneumonia* on the formation of pleurisy is marked by the frequent coincidence of inflammation of the pleura with that of the lung. It is in new-born children we most frequently meet pleurisy without pneumonia, and it is in those of from a month to a year that this simple pleurisy is most rare. M. Baron has met pleurisy as often in children of from two to six years as in those of from

six to fifteen. 4th, Pneumonia terminating in vomica, or abscess of the lung, seems to have occasioned the development of pleurisy in some cases. 5th, *Gangrene of the lung*, and 6th, *Pulmonary apoplexy*, have been occasionally found to coincide with pleurisy. 7th, *Infiltration of the lung* often coincides with simple serous, or sero-purulent effusion. Those pleurisies which coincide with an acute œdema of the lungs which has come on during Bright's disease, are rather the effect of a common cause, than the effect, the one of the other. 8th, Pleurisy may precede *bronchitis*; the contrary, however, happens more frequently; in such cases it generally, though not always, happens, that pneumonia is the medium of transmission between bronchitis and pleurisy. 9th, *Croup* is said to be frequently complicated with pleuro-pneumonia. 10th, *Simple laryngitis*, or *stridulous laryngitis* are sometimes complicated with pleurisy. 11th, When *whooping-cough* is complicated with pleurisy, there generally co-exists at the same time a pneumonia. 12th, *Millar's asthma*, in the acute form, may be complicated, if not with pleurisy, at least with something very like it. 13th, During *chronic asthma* (pulmonary emphysema) pleurisy may supervene in children. 14th, *Coryza* may be accompanied with pleurisy in very young children. 15th, *Pulmonary tubercles* constitute the most frequent pathological cause of pleurisy; instances are constantly observed of this. We mean here tubercles properly so called, especially when they are softened. We find general adhesions more frequently with cavities than with tubercles still in the crude state. With respect to granulations they frequently exist without the slightest lesion of the pleura. *Tubercular pleurisy* is very rare before the first year. It is more rare from the seventh to the eighth, from the ninth to the eleventh, and from the fourteenth to the fifteenth. 16th, The influence of *tubercles in the bronchial glands* and in the mediastina on the production of pleurisy is rather doubtful. 17th, Abscesses in the mediastina, whether tuberculous or not, have been found by the author the manifest cause of the development of pleurisy. 18th, *Pericarditis* and carditis may follow pleurisy, or the reverse. 19th, *Inflammation of the thoracic parietes*. Pleurisy has been found to follow swelling of the skin, cellular tissue and muscles of the parietes of the chest, such inflammation being occasioned by a leech-bite. 21st, *Gangrene of the mouth*. Frequent examples are recorded of this complication. 22nd, *Gangrene of the pharynx, and œsophagus* may be complicated with pleurisy. 23rd, *Aphthæ* may be complicated with pleurisy. 24th, Pleurisy is sometimes attributed to the presence of *worms* in the alimentary canal. 25th, Diseases of the liver, as hepatitis, congestion of this organ, cirrhosis, &c. have been observed to be accompanied by pleurisy; 26th, *Jaundice* sometimes is accompanied by pleurisy; whilst 27th, *peritonitis* frequently coincides with pleuritis in infancy. 28th, *Bright's disease*, in almost all the children affected with it, is accompanied by some morbid change in the pleura, either simple effusion, or pleurisy. 29th, Certain *encephalic affections* (meningitis, hydrocephalus) are accompanied by pleurisy. 30th, *Anasarous deposits*, essential œdema with or without albuminuria, are combined with pleurisy: thus it is found in œdematous new-born children. These two diseases are probably effects of one and the same cause. 31st, The same may be said of *induration of the cellular tissue*. 32nd, *Gan-*

*grenous affections* in all their forms, appear to exercise some influence on the development of pleurisy. 33rd, *Diseases of the skin*, more especially the acute exanthems, are frequently complicated with pleurisy; *measles* more frequently than any other. 34th, *Chronic cutaneous affections*, so frequent in children, are considered as the causes of pleurisy. 35th, *Scrofulous affections* predispose to pleurisy, whether from the presence of tubercles in the lungs or in the mediastina, or from the delicacy of the constitution. 36th, Surgical diseases, great operations and phlebitis, may be followed by pleuritis.

*External Influences.*—1st, *Tedious labour*, especially when the child remains a long time in the passage, may become a cause of phthisis, this condition favouring the sanguineous exhalations into the pleura. 2nd, *Hereditary predisposition* may have some influence. 3rd, *Lactation*, when imperfect, and received from a woman who is unhealthy, or pregnant, may, by weakening the constitution, predispose to pleurisy. 4th, *Cold* and sudden alternations of temperature, have an unquestionable influence on the production of pleurisy. There can be no doubt that the surrounding cold air is one of the principal causes of pleurisy in new-born children. 5th, The influence of *seasons* corresponds with the preceding. In Winter pleurisies are most frequent; a little less so in Spring and Autumn. 6th, The influence of *contusions*, those more especially on the chest and accompanied with compression, has been proved by numerous examples.

*Symptoms.*—*Local Symptoms.*—1st, *Pain*. In very young children the means of ascertaining the existence of this symptom, is to percuss the chest; this will be sure to cause pain and so discover the precise seat of the disease. Great caution and attention are required on this point, especially in new-born children. This pain, thus excited, may be recognized by a mere grimace, or by a shrinking back on the part of the child. The seat of the pain varies; sometimes it is behind the sternum, sometimes laterally, either at the middle, or at the lower part of the chest; sometimes on a level with or below the false ribs, in the epigastrium, at the shoulders, behind the scapula of the affected side, and lastly in the back.—2nd, *Dyspnœa*, is a symptom detected in the child by the respiration being short and high, being accompanied by elevation of the chest, or considerable enlargement of the anterior abdominal parietes; there is also swelling of the veins of the neck, bluish tint of the lips, alternate dilatation and contraction of the *alæ nasi*, an expression of dejection in the countenance, a look of distress, prominence of the eye-balls, considerable separation of the eye-lids, a convulsive grasping at objects which may serve as means of support. These symptoms are sometimes intermittent and periodical.—3rd, *The Respiration*, ordinarily frequent, varies from 30 to 100 per minute, according to the child's age. Each respiration, which is very short, is separated from the others by intervals proportionally long. Seldom there exists merely increased elevation of the chest; more frequently the movement of enlargement of the lateral parietes is supplied by that of the diaphragm; thence, in pleuritic patients, there is an increase of the abdominal respiration. M. Baron says he has frequently seen the inferior ribs kept immoveable during a strongly abdominal contraction, whilst the

other ribs performed their ordinary movement. 4th. The *Cough* is usually frequent and dry; in the second infancy there are sometimes mucous or salivary sputa. 5th. The *Dilatation of the chest* by the action of the liquid effused has not exceeded a centimetre and a half. It is much more frequent on the right than on the left. Contraction of the cavity of the thorax is more frequent in tubercular pleurisies than in simple pleurisies. This deformation sometimes succeeds pleurisies not of a tubercular character. 6th. *Percussion of the chest*. The sonorousness of the chest may not be altered, or be so only over a small space, because the quantity of liquid effused is frequently very small. When the effusion is very copious, the dulness most frequently occupies the posterior and inferior part of the thorax. Sometimes it is limited to the posterior and upper part. It may be circumscribed at the anterior or lateral part, either superiorly, or inferiorly, or entirely from above downwards. It ordinarily extends from behind forwards, and from below upwards, then diminishes in the inverse order. Like pleurisy, it is more frequent on the right side. Often there is dulness posteriorly, and only diminished sonorousness anteriorly. The sonorousness, instead of being diminished, will be increased, if there be pneumo-thorax. In order to be able to diagnose morbid dulness and the tympanic sound, it is necessary to know the relative sonorousness of the different points of the chest: in children of from eighteen months to seven or eight years old, the general sonorousness of the chest is very considerable. It is a little less in new-born children, than in children who have reached the first or second year. Anteriorly it is less than posteriorly; more especially less in the precordial region. In new-born children the limits of the dulness are difficult to be assigned, because the heart is almost always covered by the anterior part of the left lung. It is as far as the seventh rib nearly, from above downwards, that the sonorousness extends. On the right inferiorly, over a space of from four to six centimetres, the sonorousness is somewhat less than over the rest of the anterior region, by reason of the liver, which, being always large in children, projects more or less into the chest. On the left, the limits of the normal sonorousness are less fixed than on the right, in consequence of the frequent variations in the size of the stomach and intestines, occasioned by the frequent repetition of digestion in children, and the usual dilatation of the intestines by gases.

7th. *Auscultation*.—The effusion may be very small, or even none; and then there may be no diminution of the respiratory murmur. There is an *absence of the respiratory murmur* only during the existence of the effusion. Besides, the respiratory murmur being very much developed, a considerable obstacle is required to destroy it. The presence of false membranes is sufficient to diminish the respiratory murmur, and at the same time the sonorousness. The *bronchial respiration* may be produced by effusion, but it is much less frequent than the absence of the respiratory murmur. The *dry and rough respiratory murmur* is frequently found. The *prolonged expiratory murmur* is often heard, which is explained by the compression of the lung. In children the expiratory murmur is prolonged by the slightest cause.

8th. The *resonance of the voice* is not oftentimes increased. In pleuropneumonia, on the contrary, it is increased by the pneumonia. When th

effusion is considerable, there is oftentimes bronchophony and ægophony, *Bronchophony* co-exists with the *branchial respiration*. *Ægophony* is rare in very young children; it becomes more frequent according as children approach puberty.

9th. *Application of the Hand*. The tremour of the voice, felt by the hand applied to the parietes of the chest, disappears in pleuritis, in the part on a level with the effusion. The hand also detects the pleuritic friction.

*General Symptoms*.—1st. *Attitude*. The patient lies ordinarily on the back, often on the affected side, seldom on the healthy side. Sometimes however, lying on the affected side increases the pain, cough and dyspnoea, and becomes impossible. Often, at the commencement of the disease, the patient lies on the side; at a more advanced period it becomes indifferent. Sometimes, as long as the pain exists, lying on the affected side increases the pain; when it has disappeared, the little patient cannot lie on the healthy side, because it increases the dyspnoea. The dyspnoea is sometimes so urgent that the sitting position is the only one endurable. There is often a frequent change of position, and constant restlessness, especially in early infancy; occasionally complete immobility, or only a little languor, and often debility.—2nd. *State of the face*. Face pale; sometimes red at the onset, either on both sides, or only on one; occasionally livid. Physiognomy occasionally sad, and restless; sometimes expressive of pain and dejection; eyes sometimes dull at an advanced period.—3d. *External appearance*. Skin of the entire body pale, sometimes dry.—4th. *Jaundice*. Pleurisy is accompanied by this colour in new-born children. This, however, cannot be set down as a symptom.—5th. There is sometimes an abnormal *eruption of papulæ* during the course of pleuritis.—6th. *Emaciation* may proceed even to marasmus, when the pleurisy is of long continuance.—7th. *Œdema* sometimes occurs as a symptom of pleurisy. It is observed at all periods of infancy, especially in very young children, and it may be general or partial.—8th. *Induration of the cellular tissue* has sometimes been found to be the effect of pleuritis.—9th. *Fever*. In many cases there is intense heat at intervals, chiefly at the onset of the disease. When it tends to a fatal termination, there is a cold feel, either of the entire skin, or merely of the extremities. In inflammation of the chest in children the mammary region is hotter than the other parts. *Pulse* variable, more often frequent; when pneumonia co-exists, it becomes so frequent, that it is impossible to count it. Pulse is slow and irregular in cases, where there was cerebral complication. The fever is more frequently continued in acute pleurisy; in many cases there are exacerbations, most frequently towards evening, sometimes at night, and even during the day.—10th. *Palpitations* sometimes observed.—11th. *Cerebral symptoms*. Convulsions have been observed more especially in young children, head-ache, delirium, coma, dilatation of the pupils, strabismus, a contracted and rigid state of the limbs.—12th. *Abdominal symptoms*, especially in very young children; vomiting of drink and food, of bile, mucous, bloody substances, at the same time that there is sanguineous effusion into the pleura; dryness, redness, or mucous coating of the tongue; thirst, diarrhoea of yellow or green matter, tension of the abdominal parietes; loss of appetite; refusal of the breast.

*Course, duration and mode of termination*.—Onset often abrupt. *Pass-*

sive pleuritis is developed slowly. Its commencement often difficult to be detected. The author lays down a list of the symptoms in the order of their succession; pain, great inquietude, fever, hurried respiration, slight dyspnœa; then, dulness, commencing usually at the posterior and lower part, and extending thence upwards and forwards; absence of the respiratory murmur, and in some cases œgophony, cessation of pain, crying, respiration more frequent; dyspnœa; cessation or diminution of fever, bronchial respiration soon replaced by the absence of the respiratory murmur; then a diminution of dulness, appearance of the vesicular murmur in points where it had ceased to be heard. If the disease be long continued, there are alternate remissions and exacerbations. Should the disease go on to effusion, the liquid makes an exit for itself, either by the air-passages, by means of a communication established between the cavity of the bronchi and that of the pleura, or through the thoracic parietes. There is an accompanying affection, which does not abridge the duration of pleurisy, and that is pulmonary phthisis—the same may be said of a scrofulous habit of body.

*Differential Diagnosis.*—There are two circumstances which may render the diagnosis of disease difficult, either the presence of certain symptoms which divert the practitioner's attention from some certain affection which does exist, or the absence of certain characteristic signs of an affection which really does exist notwithstanding the absence of these signs. In the latter class the author places certain circumstances whose absence may render the diagnosis of pleurisy difficult. Thus the small extent, as well as the small quantity of the effects of inflammation, the partial existence of pleurisy, the very small dimensions of false membranes, the trifling quantity of the effusion, circumstances which render the perception of the physical signs very obscure; want of the rough friction-sound of the false membranes occasioned by their slight consistence, short duration of the dulness on percussion, absence of the vesicular murmur, absence of bronchial respiration, infrequency of œgophony, and the uncertainty with respect to pain. In the first order we are to place the frequent coincidence of the different diseases of the air-passages or of the other structures more striking than the pleuritis, and attracting all the attention of the practitioner; thus, pneumonia, in consequence of its almost constant coincidence and predominance, and the analogy of its symptoms with those of pleurisy; pericarditis, by the similarity of the symptoms and the vicinity of the organs affected; congestion or inflammation of the encephalon, by the nervous phenomena accompanying them, especially convulsions, and which so often serve to mask the thoracic affection.

Convulsions occasion no real difficulty in the diagnosis of pleuritis in children, when we have examined the different organs, the chest in particular, except in those cases where the products of the inflammation of the pleura, especially the effusion, do not manifest themselves by sufficiently marked physical signs. The difficulty of detecting pleuritis is greater the younger the child is. The principal affections which may be confounded with pleuritis are—acute and chronic pneumonia, infiltration of the lung, gangrene of the lung, pulmonary tubercles, bronchitis and croup; the acute asthma of infants, chronic asthma, pleurodynia, which latter is



readily confounded with pleurisy, especially in children below three years old; pericarditis, with or without effusion; aneurysm of the heart and vessels; diaphragmatic hernia, &c.

It is with *pneumonia* that pleuritis is most frequently confounded. In pneumonia the red colouring of the cheek-prominences, dryness and incrustation of the lips, are more frequent than in pleuritis; acceleration of the pulse more constant, more continued: alteration of the face, depression of the strength more rapid; infiltration of the external cellular tissue is a sign of pleuritis, not of pneumonia. Hurried respiration more continued in pneumonia. Respiration rather abdominal in pleuritis, and costal in pneumonia; cough more sonorous, and less short in pleuritis than in pneumonia; cry more frequently veiled in the latter. Dulness more complete in case of effusion; still in new born infants the dulness is sometimes very marked in pneumonia, and sometimes none at all in pleuritis. Crepitous and subcrepitous râle in pneumonia; but oftentimes accompanying affections of the lungs and bronchi give rise to râles during the existence of pleuritis. Bronchial respiration more frequent in pneumonia; absence of respiration more frequent in pleuritis. The very feeble respiration occurs more frequently in pneumonia, especially in new-born infants, and more rarely in pleuritis. The respiration is as it were rough in pneumonia, there is friction in pleuritis. Course of pneumonia is more rapid and more regular; the alterations as to better or worse are much less marked. There are intermissions and accessions of dyspnoea in pleuritis.

In chronic pneumonia and chronic pleuritis we have dulness, absence of the respiratory murmur, bronchial respiration, resonance of the cry and voice, emaciation, fever continued or intermittent; but chronic pneumonia is much more uncommon in children than chronic pleuritis, except that which accompanies pulmonary tubercles. Respiration more rarely bronchial in effusion; ægophonic resonance of the voice and cry, a sign somewhat difficult of detection; variations in the extent of the dulness and of the absence of the respiratory murmur more frequent in pleuritic patients, which is owing to the occasional variations in the quantity of the effusion.

*Infiltration of the lung* is oftentimes accompanied, in new-born infants, with dulness, extreme feebleness and sometimes absence of the respiratory murmur. Percussion is less painful in sanguineous infiltration of the lung than in inflammation of the pleura; but we can hardly reckon on this sign, because very frequently, without the existence of pleuritis at all, mere moving of the child makes it cry. The dulness does not change its seat, according as the position is changed, as in pleuritic effusion; there is neither ægophony nor pleuritic friction. The dyspnoea is less than in pleuritis; no febrile re-action, cough more rare. Instead of tossing about the patient remains immovable; the respiration is less frequently accelerated; sometimes it is even retarded. Sometimes the subcrepitous, crepitous or sibilous râles; but these are heard very close to the ear, so as to exclude the idea of an effusion, and besides they are not heard in all the stages of the disease. Debility occasioned more promptly than by pleuritis; the cry is much more frequently veiled. Pulmonary engorgement is still more difficult to be distinguished from pleuritis, when the latter exists without effusion, especially when not accompanied with dulness;

but in most cases this engorgement occasions a diminution in the sonorousness, which does not occur in pleuritis without effusion; to which we may add the veiled cry, the existence of râles, feeble respiration, and the frequent absence of fever.

*Gangrene of the lung* will be distinguished from pleuritis by bronchial or cavernous respiration, the great mucous or cavernous râle, the strong resonance of the cry or voice, fetid breath, and by copious, purulent, and fetid sputa.

Like *pulmonary phthisis*, chronic pleurisy produces frequent fever, emaciation and marasmus. In these cases, hereditary circumstances, previous history of the child (frequent colds, spitting of blood), the occurrence of tubercles in other organs, may induce us to presume the existence or absence of pulmonary tubercles. Besides, in chronic pleuritis, there are signs of pleuritic effusion, and in tubercular phthisis we hear the mucous, sub-crepitous râles, in different points, more especially in the upper parts.

In *chronic bronchitis*, which might be confounded with chronic pleuritis, the signs of effusion are wanting; it is accompanied by mucous, subcrepitous, and sibilous râles.

In *acute bronchitis* the mixture of the mucous râle, of the grave ronchus, and of the rude or rough respiration, might be taken for the pleuritic friction; sometimes also there are fits of dyspnœa, as in pleuritis. But the râles of bronchitis, so variable in children, are soon replaced by others less confused; there are no pains in bronchitis, and the patient can lie indifferently on either side.

In *croup* there are accessions of dyspnœa, as in pleuritis, but more constant. Croup is rare in very young children. Sometimes there is a veiled cry in pleuritis, as in croup, in children of this age only. In croup and in angina tonsillaris, there is sonorousness of the chest, notwithstanding the diminished respiratory murmur; laryngeal sibilance in inspiration, increasing difficulty of respiration.

In *acute asthma*, the lassitude and depression are greater than in pleuritis; pulse irregular, dyspnœa continued, and constantly increasing in intensity; breathing more laborious. *Chronic asthma*, a rare occurrence in children, is accompanied by symptoms of chronic bronchitis, and by those of pulmonary emphysema. No pain of side, no fever, no signs of effusion. In *pleurodynia*, the absence of all signs of effusion and of false membranes, sometimes an increase of pain on moving, no cough, fever none, or almost none. It is evident how difficult of detection pleurodynia is in very young children. Pressure or percussion of the chest might occasion pain, as in pleurisy; but then there would be absence of the signs of effusion, modifications in the intensity of the respiratory murmur, and some cough.

In *pericarditis* with effusion into the pericardium, which might be confounded with pleurisy, there is dulness in the præcordial region; pulsations of the heart dull, deep, sometimes irregular; pulse frequently irregular, sometimes a friction sound isochronous with the beats of the heart, whilst the pleuritic friction is isochronous with the respiratory movements. Besides the pleuritic friction is heard almost always posteriorly and laterally.

In certain *pleuritic changes not inflammatory*, such as sero-sanguineous

or serous effusions, so frequent in new-born children without the coincidence of pleuritis; dulness of sound, dyspnoea, interrupted respiration, weak cry, great disturbance; but no febrile re-action.

In *pneumothorax*, there is gaseous exhalation into the cavity of the pleura, independent of the inflammation of this membrane, which simulates pneumothorax of an inflammatory nature. In a case observed by the author at the Hôpital des Enfants there was intense dyspnoea, pulse 172 and regular, very little disturbance; skin dry, a little hot; lips dry and purple; great dyspnoea. The patient lies on the abdomen, inclining to the right side; respirations 48, and short, with rising of the thorax. Sonorousness of the chest very great, especially on the right side, which seems a little dilated. Percussion a little painful on the right. The vesicular respiration is heard on the left without any râle. On the right there is complete absence of respiration over every region. The child died. The pleura contained air, and this membrane was perfectly healthy. No other morbid change in the chest, except grey hepatizations, partial over the right lung, and some emphysematous patches over the left.

**Prognosis.**—The prognosis of pleuritis in children is worse, the younger the patient happens to be. The chief danger of the disease is to be attributed to the debility, and to the frequency of accompanying affections. The disease is more dangerous in weak and debilitated patients, than in those of a strong constitution, and who are well formed. One condition which renders the prognosis worse in delicate children, is, that in general the coincidences of affections of other organs are more frequent in them than in robust children. Still, in the latter, the cerebral complications accompany pleuritis a little more frequently. Death comes on much sooner when these complications exist. According to the author the pleurisies of summer terminate in death much more frequently, than those of any other season of the year. Pleurisy, coming on in the course of eruptive fevers, is generally of a serious character.

**Treatment.**—The treatment of pleurisy in children is attended with considerable difficulty. Some, as Triller, Vebecker, &c. advise bleeding in the pleuritis of children. Most authors reject phlebotomy, advising it to be confined to very rare cases. Several, says the author, recommend us to substitute for general bleeding, leeches, and cupping-glasses, their mode of action having the advantage of not being immediate or sudden, in weak subjects, and also because leeches applied over the painful region act as a good derivative. In young children the small size of the vein renders general bleeding difficult, and it is usual to replace it by leeches applied over the parietes of the thorax on the affected side. In infants not yet one month old, a single leech is sufficient, two or three in children of a few months old; four or five in children of from three to four years of age. After the fifth or sixth year the local bleeding may often be replaced with advantage by general bleeding, which produces an immediate depletion more easily graduated and limited, and which irritates the child less.

**Purgatives.**—The author has met several cases of gastro-intestinal inflammation (mucous) occasioned by nuxgatives, and especially by tartar-

emetic. Hence the necessity of administering purgatives in small doses in the case of children, and of preferring, more especially in new-born children, those which are least active. The repetition of purgatives is not to be dreaded, as that of bleeding, in the treatment of children. They should, however, be administered in small doses, in which case they are observed to promote the absorption of any effusion that may exist in a remarkable manner. They should not be employed till after the inflammatory period of the disease, after the cessation of pain, and the development of the effusion, unless constipation exists at the commencement, as sometimes happens. It is in chronic pleurisy, chiefly that purgatives may be found useful. Their chief efficacy depends on their revulsive powers. *Emetics* have been extolled for their efficacy in the treatment of pleurisy, more especially that of the verminous character. *Diuretics*, more especially the nitrate of potass and oxymel of squill, are strongly recommended by our author. *Blisters*.—These are generally placed over the chest on the affected side, on a level with the part affected. Some practitioners have observed, that, where blisters were allowed to suppurate in children, they soon became gangrenous. They should not be employed till the disappearance of the inflammatory symptoms. When the pleuritis is occasioned by the suppression of a cutaneous affection, the principal indication is to endeavour to bring it back by means of a blister placed over the region where the eruption was chiefly seated.

*Other Cutaneous Derivatives*.—Hot baths, sinapisms applied to different parts of the body, dry frictions, mustard pediluvia; the various species of sudorifics; frictions with croton oil; tartar-emetic to the skin, &c. &c. Burgundy-pitch and diachylon plaster with gum, which, in little patients whose skins are sensitive, keep up a slight irritation, and a mild and uniform heat. The author gives a very useful admonition with respect to the temperature of the sleeping-room of the patient, also in reference to the quantity of clothes worn by him, whilst confined to bed. He has seen, when the disease was advancing rapidly towards a cure, that the effusion became suddenly increased, in consequence of the child being allowed to leave the bed for a moment.

*Opia'es*.—To calm the pain, cough and other troublesome symptoms, various preparations of opium have been found serviceable. *Tonics*.—In chronic pleurisy it is necessary to support the strength by means of tonics and nourishing food. In the case of children, however, great reserve is necessary. *Diet*.—In acute pleurisy, on the contrary, strict attention to diet is required; in infants at the breast even, during the inflammatory stage, the nurse's milk should be suppressed, so however as not to produce excessive debility, which is always injurious. In children old enough to support the privation of aliments, only a little milk should be allowed. In children the want of nutrition is active and pressing, and accordingly becomes a more active means of treatment than in persons more advanced in years, by affording more facility to the absorption of effusions.

THERAPEUTICS OF CHILDREN FROM TWO TO FIFTEEN YEARS OF AGE.  
By A. BECQUEREL, Intern in the Hôpital des Enfants.

*The Therapeutics of Children.*

When called to treat a child, we must commence by taking into consideration several conditions connected with the physiological or pathological state of the young patient. We shall now examine these different conditions, and what modifications they render necessary in the treatment.

**1st. Physiological Conditions.**—In infancy a great organic condition predominates over all others, that resulting from the necessity of growth. The nutritive action of composition exceeds that of decomposition, because it is necessary that it should not only serve to renew the parts already existing, but because it has also to produce new molecules destined for the development and growth of the several tissues. The latter are endowed with greater vital activity than in the adult, the interstitial nutritive movement being more active, and it being in some respects double. It is to this great condition that we should refer the predominance of the nervous system in infancy and early age, and the more easy and rapid calling forth of the several sympathies, and all the consequences flowing from these two conditions. When disease occurs in a child, the first effect is a more easy production of nervous symptoms and of sympathetic phenomena, which must be taken into serious consideration. As soon as the disease becomes lengthened, and strict diet is practised, the nutritive movement of composition becomes arrested, and instead of predominating over that of decomposition, it does not even balance it; then the child becomes rapidly debilitated. This debility is produced still more easily and more rapidly, when the remedies employed are of a depleting character, such as blood-letting and purgatives. We should therefore have this fact present to our minds, as one resulting from the organization of children. The age of the child is another condition which must not be lost sight of; it is beyond a doubt that the younger they are, the more striking and prominent will be the characters just mentioned; whilst, as the child advances from twelve to seventeen, they become less marked, and admit more active treatment. Thus in a child of from twelve to fifteen attacked with pneumonia, there will be no reason to fear the effects of general blood-letting; on the contrary, such a remedial agent will be found very advantageous. The constitution of children must exercise considerable influence over the treatment employed. Thus, if we have to do with a child with a very fair, and, as it were, a transparent skin, flesh rather flaccid, fair hair, blue eyes, and long and black eye-lashes contrasting with these other conditions, a subject, in fact, presenting all the attributes of that state to which the name of lymphatic constitution is conventionally given, it is certain that in such an individual the interstitial nutritive movement is less active than it should be; wherefore diseases will pull such a patient down much more readily—in such a case evacuations must be employed with considerable reserve, and tonic remedies

capable of restoring the exhausted vital powers must be resorted to as early as possible. The same thing holds good of a child placed in unfavourable and unhealthy circumstances, with respect to habitation, aliment, &c. Sex exercises some influence on treatment.

*Pathological Conditions.*—If the physiological state exercises powerful influence over the treatment of the diseases of children, the pathological state must *a fortiori* possess similar influence. Now, the great pathological conditions which the physician must have present to his mind, are the following:—

1st. *The Nature of the Disease.*—Diseases, whether local or general, are far from resembling each other. Now, the treatment must vary with the nature of the diseases; thus no practitioner will take it into his head to treat inflammation of an organ or of a tissue, by the same remedial means, as he would treat hæmorrhage, or tubercular degeneration of such organ or tissue.

2nd. *The Local State.*—The seat of the disease must be taken into consideration, and be well established by a sure diagnosis, a thing far from being always easy in the case of children. It is against it that what are called local means must be directed; no one, for instance, would think of applying leeches to the abdomen or to the mastoid processes in the treatment of pleuritis or pneumonia.

3rd. *The General State.*—In children, in consequence of their organization, the nervous system is much more easily implicated than in adults, and the sympathies are brought into play much more rapidly and intensely. The result of this is, that the general state is often the more prominent, and accordingly absorbs the attention of the physician. When this is the case, the physician, whilst taking into consideration the local state, must endeavour to combat this general hypersthenic state. In the consideration of these phenomena there are valuable indications to guide him in the application of his therapeutic agents. In some cases, the general state is every thing, and the local lesion little or nothing; it is then against the former he must act with energy, and often overlook the second.

4th. *Previous Diseases.*—When a disease becomes developed in a child during convalescence from some other, a thing far from being uncommon, the new affection finds the young patient already enfeebled, and consequently less able to resist, as well the disease itself, as the debilitating means to be employed in its treatment. The latter, therefore, must be employed with reserve; such reserve is particularly necessary in convalescence from eruptive and typhoid fevers. When the new affection occurs in a scrofulous or tubercular subject, it is then such reserve is peculiarly called for.

5th. *The Acute or Chronic State of the Disease.*—In the former case, we shall derive much more advantage from depleting and revulsive remedies, whilst in the latter, the contrary will sometimes occur, and we must rath-

seek to strengthen our young patient, so as to enable him to resist the debilitating influence of a lingering disease.

6th. *The Stage or Period of the Disease.*—It is indisputable that, in the case of children, the sooner we can combat a disease such as an inflammation, for instance, the more hope shall we have of getting it under; yet, if we are not called in till a much later period of the disease, we shall have to act of course, but with more energy; unfortunately, however well-directed and active our remedial measures may then be, they are too frequently unsuccessful.

7th. *The Appreciable Causes.*—When the disease appears to be developed under the influence of an external cause, as of cold, for instance, we may hope more, and adopt with more energy an active line of treatment; whilst if the cause is internal, if we have to do, for instance, with those numerous inflammations, which follow measles and scarlatina, such as bronchitis, pneumonia, ophthalmia, &c. the antiphlogistic treatment succeeds much less than when the disease arises from an external cause. The same principle holds still more strongly, when we have to do with inflammation connected with tubercles; here we may assure ourselves beforehand that antiphlogistics will not only be unavailing, but that they will even contribute to accelerate the fatal term of the disease.

8th. *The Treatment previously employed.*—Thus when we know that a pneumonia, for instance, has been already treated by blood-letting, general and local, we shall be reserved in employing these means again, and we shall then adopt blistering.

9th. *Action of Therapeutic Agents.*—It is difficult to establish any general rules on this point in the case of children. The greatest differences are observable in them, as well as in adults. Such a medicine, opium for instance, is borne very well by a child, five years old, which produces in another of the same age, and apparently of the same strength, serious effects, as narcotism. If some children are able to bear large doses of certain medicines, such a thing is by no means always the case, and frequently very small quantities produce bad effects. We should, therefore, lay it down as a principle, in the therapeutics of children, always to commence with very small doses of active medicines. Such are the general principles which should guide the physician in the treatment of the diseases of children. We shall now pass in review the principal methods of medication, and study their influence on the diseases of early age.

#### ANTIPHLOGISTIC MEDICATION.

*Blood-letting.*—We shall consider separately, general blood-letting, and local bleeding by means of leeches or the cupping-glass.

*General Bleeding.*—Several practitioners proscribe this mode of treatment, especially before the age of 12. It is said, and with good reason,

that it debilitates children, and throws them into such an anemic state, that it, independently of the disease, causes them to sink : or that it favours the development of various secondary diseases. In many cases this is certainly true, especially when we have to deal with children who are pre-disposed to tubercles in consequence of previous diseases ; still this is no reason for proscribing them altogether. In children of any age, especially from four or five to fifteen years, should a pneumonia or pleuritis come on, in the midst of good health, and where the constitution is good, should such inflammation be accompanied by strong febrile re-action, heat of skin, &c. considerable advantage may be derived from a bleeding at the onset of the disease ; it may even be repeated if the fever is not diminished, and the disease is not relieved ; should the disease continue after the second bleeding, local blood-letting is then to be preferred. Should acute bronchitis of some extent come on in children circumstanced as now mentioned, and if there be considerable embarrassment of the breathing, general blood-letting, even in young patients, generally diminishes the dyspnœa and brings down the fever. The same indication is presented in amygdalitis without false membranes, and accompanied by intense fever. The same may be said of every acute inflammation producing strong re-action. In general we should employ but a single blood-letting ; by repeating the operation we run the risk of debilitating the little patient too much. However, if in several acute inflammations attended with violent pain, we often find our account in bleeding children, this is far from being always the case. Thus, if this inflammation, a thing very frequent, be connected with a more general disease of which it is but one of the elements, such as measles, scarlatina, small-pox, &c. general bleeding will be rather injurious than beneficial ; inasmuch as these diseases have already a peculiar debilitating influence on the system. Though general bleeding be not always attended with success, yet in lobular pneumonia occurring even in very young children it should be employed, but with caution, in preference to leeches. When this pneumonia depends on a tubercular affection, general bleeding should be avoided. The same reserve applies to delicate subjects of a lymphatic constitution. As a general principle it may be laid down, that in children bleeding should be seldom employed in the treatment of cerebral affections. In such cases local bleeding is to be preferred. With respect to the quantity to be taken, it is difficult to lay down any rule of universal application. In a word, when we employ bleeding in the treatment of children, we should always do it with the utmost moderation, and have present to our minds the possibility of the development of an anemic state, from which they may not easily emerge, and which may engender secondary diseases more or less serious and even fatal.

*Local Blood-letting* (by leeches and the cupping glass).—Generally speaking moderate local bleeding is probably attended with less inconvenience than the preceding ; but when it is copious and immoderate, it becomes still more dangerous than general bleeding, the quantity of which can always be better appreciated. In all children, but especially in the case of those who are very young, in those who have a fine, delicate skin, or a lymphatic constitution, or in the case of those who have been debili-



tated by unwholesome lactation, or subsequently by insufficient diet, or again by the previous existence of another disease, local or general, as eruptive or typhoid fever, the application of leeches may be attended with serious consequences.

1st. *Hæmorrhages.*—Here we have a constant oozing of blood through the leech-bites, which cannot be arrested without the utmost difficulty. Hence the application of leeches to children, or to those presenting the condition above mentioned, requires great caution. The leech-bites may become inflamed, and ulcerate; we have sometimes seen them become gangrenous. These are very unpleasant consequences. Local bleeding is useful in many diseases; in some, practitioners differ in opinion with respect to its expediency, in others it is decidedly mischievous. We shall consider these different cases. In every acute local inflammation, when freely developed, the indication of local blood-letting is positive. Thus, in pneumonia, pleuritis, bronchitis, peritonitis, enteritis, &c. this practice is indicated; the number of leeches, however, must be regulated by the age and strength of the young patient, as also by the severity of the disease; nor need we fear a repetition of the application, care, however, being taken not to exhaust the child too much. When there exists an acute pain in any point, the application of a few leeches is indicated. The same may be said in the case of acute articular rheumatism, a disease however very uncommon in young persons. When we observe rather intense functional disturbance of an organ, without our being able to connect it with any lesion of tissue in this organ, advantage may be derived from the application of a few leeches. In cerebral affections it is a common practice to apply leeches to the base of the cranium, and more especially to the mastoid processes, and certainly oftentimes with advantage. The great majority of cerebral affections in children are attributable to encephalic congestion, and the injection, which almost always coincides with convulsions, may be adduced as one of the proofs of the reality of this cause. We can easily understand the benefit to be derived in such cases from the employment of local bleeding combined with derivatives. This sanguinous congestion of the brain is manifestly the frequent cause of a certain number of cerebral affections; but in several cases, probably in the majority, it is itself but the consequence of an important organic lesion of the brain or its membranes: as for instance tubercles which may be developed in these parts, and more especially in the pia mater, as also acute or chronic inflammation which is the result of them. Here then is a permanent cause of stimulation; it is in fact under its influence that those sanguineous or serous congestions which produce convulsions, &c. are so frequently developed. In this case the local bleeding is employed to combat these symptoms, and sometimes it does arrest them; but most frequently it is ineffectual; as there is a permanent cause, an organic change, which acts as an unceasing stimulus. This is the reason why leeches are almost always so useless in that disease of children, which commonly goes by the name of cerebral fever, since it is owing to the development of an inflammation of the pia mater (meningitis) and this inflammation is itself connected with tubercular granulations of this membrane. Here it becomes very important to establish a correct diagnosis. If the previous history and the present state of the young patient incline us to admit the existence of tubercular meningitis, it will

be almost useless to exhaust them by having continual recourse to local bleeding: in the contrary case, such practices will be beneficial. It may be observed here that the question as to whether a cerebral affection be tubercular or not, is often very difficult of solution. When it is plain that tubercles exist in some other part of the system, the thing is possible; but these tubercles are often so little advanced that they cannot be recognized, and so we are left in doubt. We must then rely on experience and on previous observation, which have shown us that in nine-tenths of the cases the cerebral affections of children are of a tubercular nature: it is admitted; such admission, however, rests only on analogy. From what we have now seen, it is obvious how far the practitioner must be from being able to affirm the cure of cerebral affections by the application of local bleeding; he may sometimes, but not always, calm such symptoms as delirium, convulsions, &c. &c. but not destroy the organic causæ (tubercular meningitis) which has produced it. When the cerebral symptoms are the consequence of an acute disease developed in some other point besides the brain or its membranes, such as eruptive or typhoid fevers, various organic inflammations, in general advantage is derived from the application of leeches to the base of the cranium; this practice should be combined with *derivatives*.—Convulsions and other cerebral affections are sometimes the consequence of the anemic state, of exhaustion in fact. It is of the utmost importance accurately to diagnose such cases; as the taking of an additional quantity of blood must aggravate the disease. This diagnosis may almost always be established by considering the general state of the young patient, as also the previous history of his case. Eruptive fevers are often complicated with different inflammations, such as bronchitis and pneumonia, which are the most frequent; enteritis, ophthalmia, &c. may also be observed. Are local bleedings then beneficial? The general opinion is in favour of them. Our author's experience will not warrant him in acceding to such an opinion. Such inflammations, he considers, receive from the disease which has given rise to them a peculiar and specific character, which renders them different from what they would have been, had they been openly developed, and causes them to resist much more obstinately local bleedings, which have then no other effect save that of exhausting the young patient without accomplishing a resolution of the disease. So that in such inflammations we should be very reserved in employing blood-letting, so as not to repeat it too often, and not to prescribe it, unless there be intense functional disturbance of the diseased organ; such, for instance, as a distressing dyspnœa. Those ophthalmias which so frequently complicate eruptive fevers, very often resist leeches; local active applications are then required, such as the nitrate of silver and powerful revulsives. In the typhoid fevers of children, especially when the patients are of good constitution, leeches are to be employed only when severe abdominal symptoms exist, or some affection of the brain; caution, however, is necessary in all such cases. The development of tubercles in the different organs of the body oftentimes occasions inflammation at some certain period of their existence. We have already noticed this when speaking of tubercular meningitis; but we sometimes observe tubercular pneumonia, pleuritis and peritonitis of the same kind—in such cases local bleeding is ordinarily employed. It cannot be denied that this means calms

the symptoms, diminishes the functional disturbance, and the fever; but we must not deceive ourselves with respect to the amendment which takes place; for if it is sometimes definite, it is not always so, and the young patient is often destined to perish at a later period, either by the ulterior progress of the tubercles, or by the development of a new inflammation around them. In these cases, however, we must employ leeches, but with moderation, for the purpose of diminishing the febrile re-action, and so of enabling us to employ other plans of treatment. It is almost useless to endeavour to combat tubercular enteritis by local bleeding. However we sometimes, though rarely, find tubercular ulcerations cicatrised, or in the way of being so. In such cases it is nature and not art that effects the cure. The cupping-glasses do not present the same inconvenience with respect to hæmorrhages, ulcerations, &c.; their application is also more easy and less painful. They cannot, however, be employed in young patients when very much emaciated. They are prescribed in the same cases as leeches, for diseases of the chest and abdomen. We must necessarily have recourse to the latter, when we would practice local bleeding at the base of the cranium.

AN INQUIRY INTO THE NATURE AND CAUSES OF EPILEPSY;  
WITH THE FUNCTION OF THE SPLEEN AND THYROID BODY.  
By John Jackson, M. R. C. S. 8vo. pp. 107. Whitaker and  
Co. 1842.

THE above is certainly a curious title. The conjunction of the three subjects will sound oddly in antiquated ears, who have rarely associated epilepsy with spleen and thyroid gland—we beg pardon, body. We agree with our author that, because the uses of the two organs in question have not been yet discovered, it does not follow that they are inscrutable; but we certainly think that it does (though he says it does not) “justify the supposition that they are necessarily *less obvious* than those of other organs.” Surely the office of the spleen is infinitely less apparent than that of its neighbour—the stomach, or even of the liver? But let that pass. We shall not go over a description of the epileptic paroxysm with Mr. Jackson, as very few are unacquainted with the phenomena; but we shall quote the following passage for the comfort of homicides, suicides, parricides, &c. who may contemplate an easy death by the rope or the handkerchief.

“The symptoms of an epileptic paroxysm bear a close resemblance to those observed in asphyxia from suspension. When a criminal is executed, or an animal is hung, the following phenomena are produced:—unconsciousness—convulsions, chiefly of the face and upper extremities—turgescence and lividity of tenance—relaxation of sphincters—seminal emission and death. Precisely the same group of symptoms, therefore, as occur in a fatal epileptic paroxysm. Suppose that a person attempts suicide by suspension, and is only *half* hung, he is cut down before life is extinct, and recovers—the analogy still holds;

he has no recollection of having suffered during the suspension. The following quotation is from Dr. Elliotson's Lectures: 'Although the individual may struggle, and although he may be all but dead, and may hang so long as to be insensible, it does not appear that there is any suffering.'" 13.

We have some doubts on this point. The first execution we ever witnessed was that of a deserter from a ship of war, who plunged overboard and attempted to join the rebels encamped on one side of Waterford harbour. He was captured and taken to Newfoundland, where he was tried and hanged. In his struggles, he broke the cords by which his arms were bound, and instantly grasped the rope round his neck, and endeavoured to prevent the strangulation! In this horrible and agonizing state he hung for nearly half an hour, when his struggles ceased! We shall not easily forget such a scene, which had nothing in it to make us enamoured of the halter or handkerchief; however lauded these may be by physiologists as first rate modes of euthanasia.

Our author, observing the analogy between asphyxia and the epileptic paroxysm, was led to suspect that the pathological state of both was the same—namely, simple cerebral congestion. To ascertain the truth or error of this theory, he placed a ligature on the superior cava of a dog, above the vena azygos. Great lividity and turgescence of the tongue and mucous membrane of the mouth, with complete insensibility, immediately ensued; but no convulsions. The cords being loosed, the dog got up—shook himself—and walked to the other end of the room. He was killed by a drachm of hydrocyanic acid, and, on examination, the ligature was found perfectly tight. This experiment appeared to our author to prove that cerebral congestion, *per se*, produces insensibility, but not convulsions. The thought then occurred that the latter might be owing to spinal congestion. Three fourths of the blood from the vertebral sinuses being returned to the heart by the cava superior, Mr. Jackson determined to tie the vena azygos as well as the superior cava. A dog was again selected, and a ligature passed round both vessels. Insensibility the most complete, accompanied by strong tetanic convulsions of the whole muscular system immediately ensued. There was also great livor and turgescence of the mucous membrane of the tongue, lips, and mouth. All these symptoms continued till the animal's death, which quickly followed. Another similar experiment was made with the same result. From these experiments our author thinks he may draw the following conclusions.

"1. That cerebreal congestion gives rise to insensibility, and spinal congestion to convulsions.

2. As the presence of cerebro-spinal congestion in the epileptic paroxysm is denoted by the lividity and turgescence of the face and hands; and as insensibility and convulsions are the two essential symptoms of the paroxysm,—that cerebro-spinal congestion is the pathological state or proximate cause which gives rise to those symptoms.

3. That the primary cause, the cause *par excellence*, or primum mobile of the epileptic seizure, is necessarily a *something* which is capable of rapidly inducing cerebro-spinal congestion." 18.

Cerebro-spinal congestion, then, is regarded as the *proximate cause* of epilepsy. But the question arises, what is it that gives rise to this cerebro-spinal congestion? Or what is the nature of this primary cause?

God is infinity: it is God which thou seekest, O my soul, since nothing of that which is finite can satisfy thee here—below. Thou detachest thyself from all the joys of earth, because all these joys have an end. Thou placest thy dependence solely upon this infinity, which is beyond all our passions, and which is at the same time thy hope, thy light, and thy satisfaction.

Thus, man is the point of union between nature and its Creator: all that which he experiences beyond his earthly desires is an announcement of eternity. It is by means of intelligence and love that nature arrives at him: it is by the sense of the beautiful and the infinite, that he arrives at God. The chain commenced on earth does not break, but ascends to lose itself in heaven.

The sense of infinity—a faculty of the soul. The third light which radiates towards God." 110.

Nine-tenths of the whole volume are composed of such brilliant meteors as the foregoing chapter. There are only two or three short chapters which actually bear on the subject of female education. The following passage in chapter 6, gives us the substance of female education as it at present exists.

"Since the periods of Fénelon and Rousseau there has been progress among men, and the education of women has consequently improved. We now as longer discuss the question, whether they should be instructed, or the amount of the instruction which should be allowed them. We consent to develop their intelligence. We go further, and give them the talents of artists, and of doctors of sciences; they skim, if we may so speak, encyclopædial studies, but in these studies there is nothing which leads them to think with their own thoughts. When, therefore, the passions arrive, to which it is not too much to oppose habits of virtue, the powers of the soul, and the principles of religion, they find hands skilful upon the piano, a memory which recites, and a soul which sleeps. Such is, with a few rare exceptions, the woman which the age gives us, with her petty devotional practices, her school morality, her mechanical talents, her love of pleasure, the ignorance of the affairs of life, and the want of loving and of being beloved." 31.

But what is the object of the education of women? To get married. This is the summum bonum for which the mother plots and the daughter studies. Both of them well know that this paramount object is not so readily obtained by mathematics as by music—by natural philosophy as by drawing—by walking in the day as by waltzing at night. These three studies, especially music, engross four-fifths of a young lady's time, and both solid instruction and health are sacrificed. The splendid instances of exception to this rule are as dust in the balance. Do we blame mothers and daughters for this kind of education? Not at all. People who manufacture wares for sale consult the taste of their customers rather than their own. If men will have the harp and piano, with broken health, they must also have the physician and apothecary as daily visitors to the end of the chapter.

This is the education of the higher classes of society. That of the middle classes consists in eager and sometimes successful imitation of what their superiors enjoy. As to the lower orders, they may be said to have no education at all.\*

"Thus in proportion as we seek the end, everything disappears; nothing for

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\* See the Report of the Educational Committee, or Ed. Review for April.

private happiness, nothing for the general prosperity. The world remains, and it is to that point, in fact, towards which all our provisions are directed. The object is more to please the world than to resist it; to shine, to reign. Vanity; such is the object which the tenderest mothers do not cease to show their daughters, and upon which rock the world, which cheers them on, sees them wreck themselves with indifference. Vanity in dress, vanity in agreeable talents, vanity in instruction. Be handsome, be polite, people see you; be gentle, be submissive, people hear you, says a mother to her daughter; that is to say, let appearance always take the place of reality. The soul, like the body, has its light dresses, to which we are accustomed from the cradle. The evil is not cured, it is concealed; the character is not changed, it is disguised; thus vanity covers all; to *seem* not to be, constitutes the aim of education." 34.

It is the 10th chapter of the work, consisting of eleven pages, that contains "THE EDUCATION OF MOTHERS." The others treat *de omnibus rebus et multis aliis*. Thus for instance we have a chapter on each of the following subjects:—"Know thyself"—"Of Instinct"—"Philosophical Physiology"—"Sense of Infinity"—"Immortality of the Soul"—"The Soul of Nations"—"The Unity of God"—"Love"—"Re-action equal to Action"—"Life and Death"—"Death not a Punishment"—"Hopes of Futurity," &c. &c.

But to return to the chapter in question. Our author having censured the existing education of the young female, without proposing any specific reforms, takes her into his own keeping when she has just left her parents, and become a wife. She now, he says, begins to inquire how she may best educate her offspring. The ladies of France must be very different from those of England, if this idea or solicitude is the first to engross their minds after the nuptial ceremony. But let that pass.

"The first thought which she should be lead to entertain, is to occupy herself a little less about that which she ought to teach, and a little more about that with which she ought to inspire him. Many other persons may render him learned, she alone can render him virtuous. Let the mother take charge of the soul, in order to be able, at a future day, to direct the intellect!" 48.

"This," says he, "is the summary of the education of mothers of families."

"Their mission consists in introducing our childhood into this world as into a holy temple, where the soul looks into itself, and knows itself to be in the presence of its God." 49.

In the next page we have this sublime, and to us rather novel effusion.

"Is it not philosophy which unites man to man, and the human race to God? These questions, so vast, of annihilation and eternity, which absorb the meditations of the philosopher, how often have I not found them occupying the villager in his cot, and the soldier in his bivouac! I know no metaphysics more transcendental than those which are formed in a camp, on the eve of a great battle. *What silent contemplations of infinite worlds—what thoughts directed towards invisible creations—what ardent prayers towards that celestial life which was forgotten yesterday, but which is now something more than hope!* If a ball strikes me to-morrow, all these luminaries will shine below me! God reveals himself to those about to die; and from the midst of this crowd, which no religion humanizes, no instruction softens; from this impure sink of debauchery, of crimes, and of impiety, arises all at once an immortal thought, which penetrates to the depths of the soul, and transports it to the bosom of God." 50.

The following is the best passage in this chapter, or, in the whole of the author's portion of the book.

"Thus we shall arrive at the most important part of this book—the moral study of the Gospel. I say the most important, for all education, which has not religion for its basis, renders man incomplete, and succeeds at best but in forming an intelligent animal. It is a mistake to suppose that man is great by means of science; he is only great—he is only man, by the knowledge of God. Beyond this we only see his circumscribed life, and a philosophy without light.

Wherefore does such universal egotism exist? Whence arises the love of gold? the love of power? the love of vengeance, instead of the love of humanity? Whence arises so much ambition, which engenders so many crimes? Whence so many murders and adulteries? and so much ingratitude, calumny, and depravation? From two causes, error and misery; and there is only one remedy—religion." 56.

Such a sentiment from the lips or the pen of a Frenchman, is a most rare phenomenon!

About sixty pages of this volume are dedicated to the subject of "the Prevailing Methods of Education," by Mr. Lee himself, in the form chiefly of a compilation from the scattered writings and opinions of various eminent personages—principally English.

"But as there exists much diversity of opinion upon the subject, I have preferred citing the observations of some authorities than too freely obtruding my own, (which are chiefly restricted to considering the matter in a hygienic point of view) and have consequently quoted pretty largely from publications in which education is treated of in its general and medical bearings, considering that these quotations would have a much greater weight than the opinions of an individual, (especially of so humble a one as myself,) and that from the aggregate, each reader would be better able to form a correct judgment, as well as to perceive more clearly the source whence arise some of the evils which afflict the community, and the most likely means of diminishing the frequency of their occurrence." 328.

This is the really valuable part of the volume, and Mr. Lee's remarks which connect the various links of this chain of quotations, are always judicious, and often highly important. We only regret that Mr. Lee did not take a more ample part in the construction of the volume; for, although it might not, in that case, have contained so many brilliant passages, emulating those of Rousseau, or rather St. Pierre; yet it would have presented a denser mass of solid English sense and practical observation.

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TRAITE PRATIQUE SUR LES MALADIES DES ORGANES GENITO-URINAIRES. Par le Docteur *Civiale*. Tom. 3, pp. 1438, 8vo. Paris, 1837—42.

A Practical Treatise upon the Diseases of the Genito-urinary Organs. By Dr. *Civiale*. 3 Vols. 8vo.

We have perused this book with much attention and great satisfaction, and feel desirous of presenting our readers with a faithful analysis of its

valuable contents. However severely we may have felt called upon, in our last number to reprobate Dr. Civiale's falsification of facts, in reference to the results of his lithotripsy operations, upon the present occasion we observe the development of sound chirurgical principles, based upon able reasoning, and supported by a most extensive experience.

The work does not embrace the venereal diseases and calculous affections of the genito-urinary organs, and is divided into three parts, each occupying a volume. The first relates to stricture and its consequences; the second to the diseases of the neck of the bladder and of the prostate gland: and the third to diseases of the body of the bladder.

An introductory chapter presents us with some general observations upon the anatomy and pathology of the genito-urinary organs. The former need not detain us farther than to observe, that the author represents the urethra, from more than 200 admeasurements, to be much shorter than it is usually understood to be, viz. six inches in the adult, and from three and a half to four inches in the boy. He also represents the passage of the urine from the kidney into the bladder to result from an active contractile movement of the former organ; and, that its expulsion through the urethra is accomplished by the muscular powers of the body of the bladder, overcoming those seated at the neck:—there being two instinctive and antagonistic powers concerned, corresponding in operation and result to those engaged in liberating the gravid uterus of its contents in parturition. The abdominal muscles assist the propulsive, and the perineal muscles the constrictive powers of the organ.

#### *General Pathological Observations.*

Diseases of the urinary organs often present symptoms referrible to the urethra, while this part neither during life or after death manifests any corresponding change of structure. There are two classes of cases of this description: viz.

A. *Diseases of the Urethra, depending upon a pathological Condition of this Canal, without obvious or permanent Change of Structure, i. e. Spasmodic Stricture.*—The sudden and temporary nature of the stricture, and the absence of discharge from the urethra, point out this affection. The slow introduction of a bougie is easily accomplished, while if this be passed roughly, the re-action of the canal may give rise to the belief of the existence of permanent stricture. Spasm often complicates permanent stricture, and is often induced by caustic, excessive distention, &c. &c. Too frequent coition, sudden application of cold, mental impressions, injuries to the perineum, the pressure of the child's head during labour, are causes. In the simplest cases baths, emollient and anodyne glysters, the immersion of the glans in cold water, or leeches to the perineum, are efficacious remedies; but when they do not prove so, and the suffering is great, or retention of urine menaced, we must have recourse to the bougie or to the catheter, a remedy when carefully employed neither difficult or dangerous.

B. *Affection of the Urethra resulting from the influence of Sympathy with other parts of the body: Neuralgia of the Urethra.*—The causes of



these neuralgic affections of the urethra are often very obscure ; occurring frequently in those who have become debilitated by venery, or who are suffering from some disease of neighbouring organs, they are found in others who are exempt from any such predisposing causes. The symptoms frequently resemble those of the most serious diseases of the urinary organs, and are chiefly discriminated by their sudden access, variability, and intermittence—sometimes observing exact paroxysmal periods. Although, when the neuralgia exists as a mere complication and aggravation of some other important disease, its relief may become a matter of difficulty, yet, when existing in its simple state, this is not usually the case. It is chiefly effected by the wax bougie ; but, when this instrument is employed without address, it gives great suffering, and often leads to the erroneous belief that permanent stricture exists, and undue credit is awarded for treating the imaginary complaint. The author long since observed, that the exalted sensibility or irritability, frequently present in the urethra in calculous and other affections, became relieved by this instrument. He introduces a middle-sized bougie daily, and leaves it in the urethra from five to ten minutes, increasing the size slowly, accordingly as the patient is enabled to permit this, and continuing the applications until all irritability has subsided. In obstinate cases, the introduction of a metallic catheter or lithontritic instrument has expedited the cure. Joined with this means we must pay due attention to the condition of the alimentary canal, correct the acridity of the urine. Cold douches to the perineum, hypogastrium, &c., the excitement of antimonial pustules, and, in very obstinate cases, a gentle application of the nitrate of silver, are other means. Some cases resist all means of treatment however varied. Neuralgia of the urethra is by no means rare in women, in whom however it presents very varied characters, and is usually confounded with affections of the neighbouring organs. Neuralgia of the urethra may complicate any disease whatever of the genito-urinary organs, and render its treatment inert or even impossible, until it has itself become relieved.

## PART I.—PERMANENT STRICTURE OF THE URETHRA AND ITS CONSEQUENCES.

### CHAP. I.—*Organic Lesions resulting from Stricture.*

A. *The Lesions which constitute the Stricture itself.*—These are found to occur in the form of *brides* or *bridles*, which do not however result as has been supposed from ulcers or cicatrices ; and as *excrescences* or *vegetations*, so needlessly subdivided by authors, existing in every variety ; but a *thickening* or *induration* of the walls of the urethra is the most common condition of parts to meet with. In some cases the morbid tissue becomes changed in colour, but in most cases there is no change in colour or density of the submucous tissue, the induration seeming to result from a mere increase of substance. Sometimes not only does the canal lose its elasticity but acquires a horny texture, and the dryness, occasioned by the absence of mucus, causes additional pain during the passage of instruments or urine.

**B. Lesions which are the Consequence of Stricture.** (1.) *Phlegmasia of the Mucous Membrane behind the Stricture.* That this should occur from the irritation of the walls of the urethra distended by the urine, forcibly propelled by the continued contractions of the bladder, will at once be seen. In truth this is the seat of the irritation, erroneously believed to exist in the actual stricture; for, as the narrowing of the canal increases, the inflammatory action, which may have originally produced it, seems to become displaced, and is found at a point posterior to it. It is from this part the chief discharges proceed. Mere redness or depositions of lymph may be found after death, or there may be breach of surface, and the mucous membrane is sometimes perforated like a sieve. (2.) *Abscess of the Walls of the Urethra* will be noticed separately. (3.) *Dilatation of the Urethra behind the Stricture* may vary in extent, from being hardly perceptible, to a cavity large enough to hold an egg, and which has been mistaken for the bladder itself. All things being equal, the extent is proportionate to the hypertrophied state of the walls of the bladder, and to the degree of resistance offered by the stricture. It occurs independently of breach of surface, and, in the majority of cases, is confined to the membranous portion of the urethra. The prostatic portion becomes sometimes affected, involving part of the gland in atrophy, and the mucous follicles at the neck of the bladder, and the extremities of the ducts opening into the urethra, become dilated in like manner. (4.) *Rupture of Urethra behind the Stricture.*—The apertures vary in form, extent, and direction, and, occurring sometimes spontaneously, they are usually preceded by inflammation of the mucous membrane. (5.) *Formation of Sacs in the Urethra.*—These little cavities, varying in number, are found especially at the lower and lateral parts of the membranous portion of the urethra. They are usually covered by a fine membrane, and their existence is not incompatible with considerable duration of life. (6.) *Changes in the Urethra anterior to the Stricture.*—Although it is posterior to the stricture that the urethra usually becomes affected, yet this is by no means exclusively the case, for from sympathy or continuity of tissue it may become inflamed anteriorly. (7.) *Lesions of the Prostate.*—Although it is common enough to find this gland in a diseased state in stricture, it is by no means a necessary consequence, and may be a mere complication. The author has in numerous examinations, in very bad strictures, even occasioning retention of urine, found the prostate in a normal condition; while, in the aged, the gland frequently undergoes great change, unaccompanied by stricture. Still, doubtless the irritation of its mucous membrane caused by the detention of urine in stricture, often is followed by abscess in its substance. (8.) *Lesions of the Genital Organs.*—The production of hernia humoralis will be afterwards considered. The tumefaction of the prepuce is a common occurrence, when lesions exist at the prostatic portion of the canal, or at the neck of the bladder. In these cases, the penis often acquires a very unusual development, becoming elongated, hard, and rigid, a condition not to be confounded with the flaccid elongation resulting from masturbation, and traction of the penis by sufferers from stone. (9.) *Lesions of the Bladder* will be treated of at large hereafter, modifying as they do the symptoms of stricture in a remarkable degree. (10.) *Lesions of the Ureters.*—Civiale has frequently found these distended and

inflamed, but not usually thickened. The distension may occur on one side, or only at intervals, giving the appearance of nodosities. Sometimes narrowing of the canal analogous to that of the urethra occurs at intervals. (11.) *Lesions of the Kidneys*.—The greater part of the patients who die, perish from consecutive disease of the kidney.

#### CHAP. II.—*Seat of Stricture.*

When an acute state of inflammation of the mucous membrane passes into the chronic stage, some portion of the canal becomes modified in its vitality, and the submucous tissue increased in quantity and consistence. The canal is not only diminished in size at this point, but loses its dilatability, elasticity, and suppleness. There are various parts of the canal especially liable to this occurrence, viz. the orifice of the urethra, the two extremities of the fossa navicularis, the anterior part of the spongy portion, and the junction of the bulbous and membranous portions—so that, it may be found sometimes at the commencement of the canal, sometimes at the depth of  $3\frac{1}{2}$  inches, and at others at the depth of 5. The nature of the stricture often varies according to the part in which it occurs: thus, at the orifice it is frequently a mere bridle, interfering little with the suppleness of the parts: at the spongy portion it is usually a broad, flat, resisting band, accompanied by induration and thickening; while, at the curve, it is frequently linear, as if from a ligature, and the neighbouring mucous membrane may be covered with vegetations or rugosities. No rule as to the *duration* of stricture can be laid down, for, although the cure is usually proportionately remote as the disease has existed long, some remarkable exceptions to this exist. Where there are several strictures, their number can frequently be only determined as we remove them, and not from the use of an instrument, or the manner in which the patient urines.\* The most considerable is often found at the curve, and others less so between this and the glans.

#### CHAP. III.—*Diagnosis.*

Easy as this may seem at first sight, errors frequently prevail, and we must endeavour to form a correct diagnosis by a consideration of the functional disorders, and the organic lesions, and by exploration.

A. *Functional Disorders*.—These are less the immediate consequences of the stricture than of the difficulty which supervenes in the expulsion of the urine—a difficulty that may be produced by other causes than stricture. (1.) *Discharges from the Urethra*.—The phlegmasia, giving rise to stricture, produces a puriform or mucous discharge, but, according to the stage, &c. of the phlegmasia, its appearance varies so much, that its source can oftentimes be scarcely judged of. The discharge sometimes becomes obstinate, owing to the too early discontinuance of the means of treating the stricture. It is not enough to restore the mere diameter of the canal; for, owing to the change in its vitality, the transition from the perverted

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\* We would suggest the employment of the verb "to urinate" (for which we have the authority of Dr. S. Johnson), as avoiding much circumlocution.

to the normal condition, and the re-establishment of its suppleness and elasticity, require a long duration of treatment to effect. Then, again, when the prostatic and the seminal ducts participate in the inflammatory action, or, when sacs are developed in the urethra, the case becomes still more obstinate. (2.) *Incontinence and Retention of Urine* will be alluded to hereafter. (3.) *Hæmaturia* is observed in some old strictures, united with great distension of the walls of the canal. (4.) *Cirrhus of the Bladder*.—This is a very common occurrence in stricture, arising from a chronic phlegmasia of the lining membrane of the bladder induced by the violent contractions of the organ, the acridity of its contents, or great distension. Sometimes it occurs when the stricture will permit a middling-sized bougie to pass, and thus causes attention to be taken off from the state of the urethra. (5.) *Impotence*.—Erections are rare, and the emission of the semen performed slowly, incompletely, painfully, and often only guttatum. After emission, however, the patient frequently urinates more freely. The existence of the obstruction is not the only cause of impotence, for the inflammatory action often extends along the seminal ducts to the testes. The cure of the stricture sometimes restores the lost power of procreation. (6.) *The Organic Lesions* that can be discovered during life are few in number. The irregularities that are felt in the course of the urethra in perineo are not signs of stricture, but relate rather to the bulbous prolongation, or to the contracted state of the perineal muscles, for, the canal here lies too deeply to discover any such prominences by the finger. *Infiltration of urine* is a confirmatory proof, and it is an extraordinary fact that such infiltration may occur without any aperture in the urethra. The rigid condition of the walls of the canal seems sufficient sometimes to induce it, for it occurs when the stricture will admit the passage of a tolerably-sized instrument.

c. *Exploration*.—Catheterism is a difficult operation in stricture, and experienced surgeons have failed to reach the bladder, even when the urethra has continued in its normal state. Obstacles to the passage of the instrument have too frequently been set down as stricture. The disease is indeed often produced by the abrupt passing of instruments by inexperienced practitioners, and, when existing, has become aggravated by the same proceeding. Civiale introduces a wax bougie *very slowly*, by which means he has often succeeded in passing an instrument, that the urethra has rejected when hastily introduced. By the bougie an exact impression of the stricture, a temporary dilatation, and a diminution of the morbid sensibility of the canal are produced. If the wax coating be too hard, it will be peeled off in passing the stricture.

#### CHAP. IV.—*Causes of Stricture.*

The greatest confusion has prevailed in the enumeration of these. Some, as tumours in the course of the canal, produce deviations rather than obstruction, other supposed causes, as obstinate gleet, are only consequences; and of others we have no proof, as a varicose state of the urethra, and neck of the bladder. The only circumstances we are justified in considering as causes, are those capable of producing and maintaining a state of irritation in the urethra. Among these we may mention (1.) The Abuses

of *Coitus* and prolonged erections : but, although these have undoubtedly some influence, this is much less powerful and general than is believed. (2.) *Gonorrhœa* is a very frequent cause, for although it is an exaggeration to say, with some, that it is the only cause, yet, is the error on the other hand, of entirely denying its influence, as great. (3.) *The Use of Instruments*.—Next to gonorrhœa in frequency as a cause of stricture, may the means used for its relief be mentioned. Instruments, forcibly employed by the ignorant, will frequently be arrested in their progress through the canal, although no stricture may be present. (4) *Violence* inflicted upon the urethra from within or without. Stricture, of an obstinate character, may rapidly follow the distension or laceration of the parietes of the urethra by a calculus, blow on the perineum, &c. (5.) The cicatrix left after lithotomy, especially when the convalescence has been tedious. (6.) A calculus detained in the membranous portion of the urethra may excite irritation, and develop a true stricture.

#### CHAP. 5.—*Treatment of Stricture.*

This is general or local.

A. *General Treatment*.—The delays which patients frequently subject themselves to, often render the affection much more complicated, and difficult of treatment. Thus there may be an increased degree of local sensibility, an exalted condition of general erethism, or a deranged condition of important organs as those of digestion, &c. Most patients abstain from *drink*, hoping thereby to diminish the quantity of urine ; but they also render it more acrid, and thus increase spasmodic contraction. Mild drinks should be taken in sufficient quantity to render the urine limpid. The indulgence in *coitus*, when not excessive, does not seem to be attended by the ill effects mentioned by authors. *Bleeding* may be required, but it is usually most efficacious employed *locally*, as by leeches to the anus, hypogastrium, or perineum. *Baths*, both general and local frequently repeated and prolonged for a long period, followed by emollient and sedative cataplasms, lotions, &c. are also useful. The local excess of sensibility is to be met with opiated glysters and suppositories, and the slow introduction of soft bougies. In this way many cases may be relieved.

B. *Local Treatment*. (a.) *Temporary Dilatation*.—This is accomplished by bougies. The author prefers the wax to the flexible metallic instrument. He disapproves of the conical form, for, the wider portion acts upon the part of the urethra that requires no dilatation, and the narrower frequently irritates the urethra, or gets involved in false passages, or the valves of the canal. It should be cylindrical, until within an inch of its termination, when the size ought gradually to diminish, and it should terminate in a smooth and rounded extremity. The urethra is less long than is generally supposed, and a bougie of ten inches, after its introduction, will have  $1\frac{1}{2}$  inch beyond the orifice of the urethra, and one inch within the bladder. In introducing the instrument we must not bring it too precipitately down upon the stricture, for this will only irritate the urethra, and prevent our learning the exact seat of the affection ; and this single

error has frequently defeated all attempts at relief. If too great delay occur, however, the bougie becomes prematurely softened. The rotatory movement is hurtful, as it may irritate the urethra, and change the form of the bougie. Sometimes difficulties present themselves, not to be overcome by the ablest hand; but, usually, when obstacles exist, the letting the extremity of the instrument repose in contact with the stricture for a while, is attended with excellent effect. Civiale supposes this arises from the morbid sensibility or state of spasm, so commonly co-existing with stricture, becoming relieved; and examination after death has often shown that a stricture might be traversed by a bougie, which had refused a far smaller one during life. This explains, too, the benefit of passing down to, and leaving for a while in contact with the stricture, a bougie of considerably larger dimensions than the one intended to traverse the stricture. The author blames the practice, however, of allowing hard sounds to remain in contact with the parts for hours or days, their pressure being sometimes even increased by mechanical force. He is surprised that so few surgeons avail themselves of the valuable information, derived from the impression made by the stricture on the soft bougie.

The slight pain or uneasiness felt on the first introduction becomes diminished each time of repeating the operation, providing that the cure be not too much hastened, and that the size of the bougie be not too abruptly increased. The instrument should be retained, at first, for a very few minutes only, but the time may be afterwards lengthened to half an hour. As the treatment cannot be considered complete until the normal diameter of the canal is re-established, in order to admit a proper sized bougie, the orifice of the urethra may require incision, for the attempt to accomplish it by means of a fusiform bougie, without previous incision, frequently gives rise to great irritation. Incautious use of the bougie may give rise to re-action and various inflammatory consequences, and before experience had taught the author the necessity of the greatest caution, he found retention of urine, urethritis, spasm and febrile re-action frequent occurrences; but, since he has employed greater precautions, such ill consequences scarcely ever occur. Indeed, the objections which have been taken to the use of the bougie are chiefly applicable to its improper employment. This instrument when properly employed is advantageous from the facility with which it penetrates the stricture, the little pain and irritation it causes, and the model of the progress of the stricture it presents; the slowness and brief duration of its application and dilatation favouring the gradual restoration of the vitality of the part, the resolution of the engorgements, and the restoration of the suppleness to the urethra. By its use the violence, frequently producing false passage, retention, or ruptured urethra, when the sound is employed, is avoided.

(b.) *Permanent Dilatation*.—When the stricture will not admit the passage of a soft bougie, a small catheter must be introduced: Dr. Civiale prefers the gum elastic, having a shorter but more sudden curve than that generally employed possesses, the extremity not being pointed. He gives minute instructions for introducing this instrument for which we have not space. In the *normal condition* of the canal, he says, as the greater num-

ber of the lacunæ are situated upon the dorsal aspect of the canal, the instrument should be directed along its inferior surface; he blames the *tour-de-maitre*, as a piece of charlatanism; and a sudden rotatory movement practised at so narrow a portion of the urethra, especially if much pressure be employed, is very dangerous. We should proceed slowly, especially as we approach the pubic arch, where the sensibility is greater.

The manner in which the urethra may become distorted by a stricture, which occupies only a part of its diameter, and which cannot be accurately pre-known, shows us the folly of the advice which recommends the pushing on the catheter in the direction of the canal. Owing to the very yielding state of the parts supported by the sub-pubic ligament, the strictured part may sometimes be pushed forwards before the beak of the instrument, and, as the sensation given to the hand resembles that derived from passing this narrow portion of the canal, if the handle of the instrument be continually depressed under the delusion that its point has passed the stricture, a false passage in the superior wall of the urethra may be made, as has indeed often occurred. When complete *retention* is present, too much disposition to employ force frequently prevails. The author carries a small instrument down to the obstruction, against which it may remain applied for some instants, the object being to get it engaged within the stricture. If this cannot be accomplished a smaller catheter must be employed. When it has once entered the stricture a gentle pressure in the axis of the urethra, accompanied by traction of the penis must be employed. When the resistance is very great, and contraction occurs at intervals, the exertion must be suspended, and again renewed; in this way cases are often relieved that resist more active manœuvres, one case cited occupying four hours in the introduction. No shocks, violence, or sudden movements are admissible, the canal should have time, to use the author's phrase, to *swallow* the instrument. The flowing of the urine is not always a proof that the catheter has reached the bladder, as this may occur even before it has passed the membranous portion.

Although great relief attends the first introduction, yet the leaving even a gum-elastic catheter in the urethra often excites great irritation, and sometimes excessive suffering, and general fever. Some degree of inflammation, which may extend to other organs, is almost always developed. The strictured part, however, becomes softer, and more extensible, and admits larger and larger instruments. It is erroneous to state that the catheter acts merely mechanically as a wedge, but more correct to suppose it modifies the utility and nutrition of the part, and thus removes the deposition. But by this means the walls of the urethra are maintained in an artificial state of dilatation, very different from their naturally approximative condition, and thus permanent is far less useful in restoring the natural elasticity of the parts than temporary dilatation, and relapses after its employment are more frequent. It requires too the confinement of the patient, and that for a long period, and risks the production of serious accidents; so that it should only be had recourse to when retention demands it, and not merely for the practitioner's convenience.

c. *Caustic*.—Great variety of opinion as to the employment of caustic as prevailed at different times; and thus, in England, where the practice

sanctioned by Hunter, was so long enthusiastically followed, this means of treatment is now less followed than in any other country. It has been applied, too, with very different views; some seek to modify the vital properties of the urethra, and soften the obstacle so as to admit of future dilatation: others aim at the destruction of all morbid products, and blame future dilatation: some think caustic only adapted to linear strictures, and others reserve it for those that occupy a considerable portion of the parietes: some apply it very lightly, and others act deeply with it: some recommend it only when the situation and character of the stricture are distinctly ascertained, while others attack all strictures indiscriminately, believing such to be the quickest mode of forming a passage. The author states that a simple bridle may be removed by one caustic application, and an instrument passed which could not have passed before. In a more extensive stricture, whose exact nature has been learned by the bougie, two or three very slight applications of caustic often act beneficially. But, when the stricture is very considerable, a first application often produces very slight effects, while, if frequently repeated, it may give rise to numerous evils. Where there have been several strictures, the application of caustic to the anterior one has sometimes relieved those posterior to it, with which this substance never came into contact. The relief derived is rarely permanent. Caustic has been erroneously supposed to act as an escharotic. If it did so the mucous membrane would be seriously injured, but the disease does not exist in this membrane, but in a change of the tissue situated beneath it. After the application, a slight redness and swelling surrounds the greyish spot of application; in a few days a thin layer falls off, a greater activity of capillary circulation follows, and a softening of the strictured part in consequence of the modification of its vitality takes place. In a very narrow stricture it becomes impossible to apply the caustic to the part where it is required, and, when incautiously used, false passage, infiltration, affection of the generative organs, &c. may ensue. When the substance has been frequently applied great difficulty of passing water results, not from the re-production of stricture, but from the rigidity of the walls of the urethra, this induration being sometimes so great as to resist powerfully the passage of the catheter. At other times irregularities, cicatrices, and excessive irritability of the urethra exist.

D. As Dr. Civiale, by patience and time, has always hitherto succeeded in penetrating into the bladder, he has never had recourse to various other means, such as dilatation by injection of air or water, scarification, incision, forcing, &c.: but, judging from the reports of others, he is not disposed to think well of them. He has never found it necessary to puncture the bladder.

#### CHAP. 6.—*Varieties of Stricture.*

The author prefaces the consideration of this subject by some remarks upon certain pathological conditions of the *prepuce*, *glans* and *penis*, which sometimes complicate affections of the urethra. The *prepuce* in some persons nearly covers the glans: when this latter can be sufficiently exposed to enable a full-sized catheter to be passed, surgical interference is



usually unnecessary; but, when a mere probe can be passed, the sebaceous matter which accumulates beneath the prepuce, sometimes exerts a powerfully compressing effect upon the urethra, preventing the due expulsion of the urine. The necessary incision should not be performed at the dorsum, as this gives rise to a deformity, frequently painful during coition. Phymosis is usually congenital, but it is sometimes brought on by irritation of the glans or urethra. The ulcers occurring beneath the prepuce are usually due to a want of cleanliness. If neglected, the prepuce may become thickened and indurated, and the glans atrophied, while the ulcers sometimes take on a cancerous action. Dr. Civiale, in affections of the prostate, or of the neck of the bladder, has frequently found the glans and corpus cavernosum of the penis so swollen and indurated, as to give rise to the appearance of the presence of an inorganic body. This sometimes presents a serious obstacle to the passage of instruments. This state must not be confounded with mere want of elasticity in the urethral walls, although the two conditions may become combined.

A. *Bridles at the Orifice and anterior to the Fossa Navicularis.*—A small bridle or two existing at the orifice may be easily divided. The narrowing of the urethra before the fossa navicularis, is sometimes increased by the development of a membranous bridle at its lower part, which, as it does not cause much difficulty to the expulsion of the urine, may have acquired considerable size and thickness before it is discovered. Its existence increases the liability to the formation of calculi in the fossa, and renders the treatment of other strictures lower down the canal difficult and painful. The treatment of this by dilatation or caustic is unsatisfactory, and the author divides the bridle with his *urelrotome* and introduces a large bougie for some seconds every few hours. It is better to repeat the incision once or twice rather than make too deep a one at once. It is surprising to observe what serious symptoms, and how altered a state of the canal will be relieved by this slight operation, proving that an obstacle to the expulsion of urine, which is hardly perceptible, may yet give rise to the most serious local and general consequences. The cure is slow and gradual, but more certain than by any other means. Sometimes the stricture is seated just posterior to the fossa.

B. *Stricture in the Spongy Portion of the Urethra.*—It is here we usually find examples of extensive stricture, and which is usually not susceptible of perfect cure. Violence done to the urethra by dilatation, removal of calculi, &c. is a frequent cause, and little time is often required to develop such a stricture. Sometimes it rapidly follows gonorrhœa, or the use of caustic. The author recognises two degrees of the affection. In the first the wax bougie is to be employed, not retained permanently in the urethra, but only from a few minutes to half an hour, or a few slight applications of caustic may be used. In the second, where the stricture has become dense and callous, and frequently incurable, the caustic is only hurtful, and the temporary dilatation often inefficient; and one of the characters of this affection is the forcible manner in which it embraces the instrument, and thus renders its removal and re-introduction so difficult. This anomalous contractility has, however, occasionally given way to

the persevering use of bougies, commencing with a very small one. It is in these cases by permanent or prolonged dilatation, that most benefit is derived. Division or scarification of these strictures, from a supposed analogy existing between them and the bridles of the orifice, has been employed by some: but even if successful as regards the stricture, this means and the cautery leave the urethra in such a state of rigidity, that although a good-sized instrument may be passed, yet dysury, strangury, and paralysis of the bladder may result, as also various lesions of the prostate, vesiculæ seminales and testes. Old strictures in this part of the canal possess a density, resistance, contractility, and a tendency to relapse, not remarked in the deeper portions of the canal: and, thus, although the facility of the application of means is greater, the cures are less easy, certain, ready, and durable.

c. *Stricture at the Curved Portion of the Urethra.*—This, by reason of the natural narrowing of the urethra that here takes place, and the injury done by the inexpert passing of instruments, is the most frequent site of stricture. It may be described as occurring in two degrees: the slighter, in the form of a mere linear stricture, like a semicircular fold of the mucous membrane, opposite the subpubic ligament, is often attended with little inconvenience, save perhaps an increased frequency of desire to urine, and the presence of an obstinate gleet. Caustic has acquired much of its celebrity by the cure of these simple cases; but the author thinks the case is far better treated by temporary dilatation, with the wax bougie, and, on no account would permit permanent dilatation. But the patient frequently does not apply until a dense mass of substance surrounds the stricture, through which the merest aperture exists, and accompanied by the severest symptoms, even complete retention. Here the mere exploration of the mischief with a small bougie is exceedingly difficult, requiring great manual dexterity. When the stricture is found to be very long and hard, it will be the best treated by an elastic gum catheter. The change of the size of the instruments must be most cautiously proceeded with, for the stricture holds them with a great retaining power, and the re-action and irritability produced by their withdrawal may become excessive. Where there is vesical catarrh, hæmorrhage from the bladder, retention, &c. the case must be treated by the permanent dilatation of the catheter, but, as soon as such complications are subdued, the bougie should be resorted to. So, too, a succession of hard, callous, structures, false passages, deviations from the normal direction of the canal, &c. may require the substitution of a catheter. The case becomes much complicated when a calculus exists behind the stricture, for, in these cases the urethra is usually very irritable, and the patient objects to the use of instruments, on account of the pain they inflict. The stricture prevents the escape of the calculus, while the calculus irritates the stricture. If the bougie here proved unavailable in such cases, the stricture must be forced by a catheter, and the calculus thrust into the bladder, or an incision must be made in perineo, according to the state of the stricture and of the surrounding parts, of which an examination by the rectum will assist in forming the judgment. In these cases, too, the author has employed dilating forceps with success, but protests against such examples

justifying the application of the system of forcible dilatation to the treatment of stricture in general. We may have to substitute the catheter for the bougie in some other cases besides those mentioned as in obstinate induration of the urethral parietes. The urethral valves, too, by entangling the extremities of the bougie, sometimes give rise to the erroneous belief of the existence of stricture. Some patients, when introducing a bougie for themselves, bear too much upon the inferior wall of the urethra at the point of union between the membranous and prostatic portions, so that a kind of excavation may become formed between the prostate and rectum, giving rise to the belief of an additional stricture. An examination by the rectum detects the vicious course of the instrument, which may be rectified by giving the bougie a sharper curve, or substituting an elastic catheter with its stilette. If a passage to the bladder cannot by any means be obtained by instruments, a case never yet met by the author, he advises the simple division of the membranous portion of the urethra, to liberate the urine, but condemns, in the altered condition of the stricture and surrounding parts, the attempting the division of the strictured part—a proceeding both difficult and dangerous. In cases, even, where with skill, time, and caution we have arrived at the bladder, and our end seems accomplished, the patient may sink under the shock occasioned by what has been done for him.

#### CHAP. 7.—*Relapse of Stricture.*

Although we have succeeded in relieving a stricture, yet, this being only an effect of a diseased state, we must to prevent a recurrence remove the cause; the very means, indeed, we employ in relieving the stricture may produce such a condition of the canal as to lead to its reproduction. It is too customary to consider the narrowed urethra as a mere inert canal, for the enlargement of which mechanical force is alone requisite, taking no account of the loss of elasticity in its walls which constitutes so important an item in the affection, and which permanent dilatation is so likely to aggravate. Thus relapse is far more frequent after treatment by this means or by the use of caustic, than it is when temporary dilatation by the wax bougie has been employed; and, when it is found at all after this latter, it generally arises from the treatment having been too rough and hurried, and not continued over a sufficient space of time. The tendency to relapse is greater in proportion to the extent and density of the stricture, as the cure is in these cases often very incomplete. A relapse after the use of caustic produces sometimes a more serious disease than the original one.

#### CHAP. 8.—*Affections resulting from the Presence or Treatment of Stricture.*

1. *Discharges from the Urethra.*—When the urethra has once undergone, from prolonged inflammatory action, even a slight organic change, a very slight cause will renew the phlegmasia with attendant discharge. Errors of diet, or ride on horseback, or coition will suffice; and thus many men who lead irregular lives pronounce every woman they meet with as infected, while many a family quarrel has arisen from the same cause, and has been fomented by the want of discrimination of the medical adviser. Sometimes discharges are produced by the connexion of two entirely healthy

persons, independently of any excess, malformation, or want of proportion. Discharges arising from stricture, contracted orifice, phlegmasia, accidental lesions, &c. take on every variety of character, and are often accompanied by very anomalous symptoms. In treating these cases we should attack the cause producing it rather than the discharge itself, and the neglecting this rule, has given rise to so much empirical treatment, often serving only to increase the original malady. The discharge in stricture was formerly deemed beneficial, as indicating a solution of the obstacle, and it is certain that such discharge is usually proportionate to the degree of dilatation produced; and in those callous strictures, in which no discharge appears, no progress towards cure is made. When, however, it becomes excessive, we must proceed more slowly, and adapt our instruments more carefully. So, too, the entire cessation of the discharge after the last bougie is a proof of cure.

2. *False Passage*.—When we consider the form, extent, situation, and density of strictures, the frequently morbid condition of the canal anterior to them, the form and size of the instruments intended to traverse it, the mode of action of some of the special means employed, and the small number of surgeons sufficiently exercised in catheterism:—the numbers of false passage met with in practice are far less than might have been expected. Their nature and extent will vary according to the means by which they have been produced, and the structure of the parts they have implicated. In the spongy portion of the urethra they are frequently produced by the patient endeavouring to treat himself, or by the practitioner employing a too-pointed instrument, and they may proceed to a considerable extent without detection. But it is at the curved portion of the urethra that we find false passage most frequent, the inferior wall being that which generally is perforated. The false passages produced by caustic are more extensive in surface but less deep than those produced by instruments, especially when these are conical. It is not always easy to detect when a sound penetrates the urethral walls, for the affected part often offers more resistance than the healthy portion—a lesson to those who employ force guided only by the resistance they meet with. The sensations of the patient furnish no guide, for the great sensibility of stricture is quite imaginary. The presence of hæmorrhage, and the sense of tearing, when the prostate is concerned, are very inexact signs. The change of direction of the catheter would advertise the surgeon that its beak had entered a false passage if this lay in an opposite direction to the urethra; but the passage is usually nearly parallel, and may be only just separated from it, and even the examination by the rectum will not enable a person, unaccustomed to such cases, to detect a deviation from the natural route. It often happens, on the one hand, that a catheter, although maintained in a straight direction, reaches the bladder only by perforating the prostate, and, on the other hand, it may sometimes become buried in the urethra to its very hilt without a drop of urine flowing. A surgeon is placed in great difficulties, when called to a case, in which the false passage has already been produced by the attempts of those who have seen it before him, for he incurs the risk of being supposed the author of it. However experienced he may be, he will often find it very difficult to decide whet

the instrument has entered the false route, or whether it continues within the natural passage. Sometimes, however, even when a false passage exists, the instrument at once passes by the natural one.

The consequences of false passages are serious according to their situation, extent, direction, the importance of the tissues they traverse, the nature of the means by which they have been produced, and the state of health of the individual. If, as soon as the change of direction of the instrument is perceived, its further progress be at once checked, immediate serious consequences need not result. The patient may not be aware of the accident, and the chief ills resulting from it are the increased difficulty of catheterism, and the delay, or perhaps the entire prevention, of the cure of the original affection. Such cases are continually occurring. When the walls of the urethra are pierced, and some important organ transfixed, the most serious or fatal results may follow in consequence of the infiltration of urine, and the excitement of inflammation. But, even here, a gum-elastic catheter, left in the false route, by removing the urine, and preventing its exciting irritation, gives time to the organizing of a new canal, and, even when important organs have become implicated, serious results do not always follow. In other cases, too, where death does not occur, a fistulous communication is maintained with the organ transfixed, *e. g.* the rectum. But, under other less favourable circumstances, a mere puncture of the walls of the urethra, extending to a very few lines in depth, may, if the egress of the urine from the urethra be obstructed, give rise to fatal infiltration.

**8. Infiltration of Urine.**—Under many circumstances the urine is brought into contact with tissues not intended for its reception: but the effects which result, and the manner in which the urine is to be diverted from its anormal course, vary in different cases. In some, the patient having a stricture, suffers all the symptoms of retention of urine, and a tumour has manifested itself for some days in perineo. This suddenly bursts, and all its contents are effused into surrounding tissues. It is an urinary abscess which has broken, and the effusion of urine is accompanied by a sense of pain and burning. In another case, where no external tumour appears, the patient may have a sense of something giving way, and of the escape of urine, although no sign of this be externally visible. Immediately all the dreadful consequences of the infiltration of the cellular tissue by this fluid supervene, and that in so sudden a manner, that the surgeon on his arrival usually finds they have reached their most alarming height. The urethra, damaged by the inflammatory action, has given way behind the stricture.

The *diagnosis* is often difficult, for, in several cases of stricture, the passage of instruments causes a tumour in perineo, which may be mistaken for an urinary abscess, but which disappears in a few days. In general the aperture in the urethra at the commencement of the effusion is very minute. The disposition of the perineal fasciæ determines, in some measure, the course of the effused fluid, but yet the great difference which may be observed in these effusions, accordingly as they have occurred suddenly or gradually, leads to the belief that the influence of the fasciæ has been exaggerated. The effusion makes progress in proportion to the

looseness of the cellular tissue of the parts, so destructive is the agency which the presence of the urine exerts upon this texture. However various means for the treatment of the affection may be vaunted, we must ever remember that the true difficulty consists in the complication of the original lesion with the effusion, and that the former may form a more difficult matter for relief than the latter. If the effusion be circumscribed, an incision must be immediately made through its length and depth, and when this is freely and effectually done, the entire relief the patient obtains, at all events for the time, is remarkable. It is not always easy, however, to indicate the exact point whereat the incision should be practised, as the principal swelling is sometimes situated at some distance from the seat of rupture, and if practised there the mischief would not be arrested. Two rules must be observed, viz. to act speedily, and not to fall into the error which has often misled young practitioners, of making the incisions of insufficient length and depth, owing to the illusion produced by the swollen state of the parts, an error the author himself fell into at the commencement of his practice. Incisions which seem of frightful extent, after the evacuation of the effused fluid, have the appearance of mere scratches, and, in proportion as we freely divide the cellular bands, the parts in contact with the urine become liberated from it. Frequently, however judiciously we proceed, the patient sinks, for certain organic lesions, heretofore caused by the stricture, and not immediately incompatible with life, become, during the shock which has now agitated the system, excited into a state of fatal activity. In some cases, especially when the operation has been delayed, the constitution does not possess vigour enough to enable it to throw off the slough, or to perform the necessary reparation; but, when such vigour does exist, it is astonishing, as Desault long ago observed, to what extent reparation will take place. Chopart relates a case in which the patient was saved, although a portion of the urethra, the prostate and the tunica vaginalis were exposed.

4. *Urinary Abscess with perforation of the Ure'hra.*—The dreadful cases of infiltration already mentioned are happily rare, but we often meet with others, in which the process is slower and more circumscribed. One or more hard tumors are produced by the inflammatory action, occurring in the parts with which the urine is in contact. These tumours usually occurring in perineo, or at the root of the penis, may be found in the region of the sacrum, pubes, abdominal parietes, or even the sternum. The abscess sometimes becomes developed without obviously active cause, and, at others, in consequence of false passage or the use of instruments or caustic. The recognition is usually easy, but occasionally, owing to its deep situation, stationary condition, and the coincident trivial state of the stricture, much difficulty may sometimes occur, and thus it may be mistaken for abscess of another description, or for hernia, while its distinction from the spermatic abscess, occurring in the vicinity of the prostate, is yet more difficult. The progress of the abscess is very slow, indeed almost stationary, and its internal surface becomes sometimes, as it were, organized. But, sooner or later, it will be followed, at its bursting, with all the alarming symptoms attendant upon complete infiltration of urine, and should, therefore, as soon as its diagnosis can be assured

opened without waiting for fluctuation. The existence of these abscesses is not always easily explained, occurring, as they sometimes do, without any irritation having been excited in the canal, and when the stricture offered scarcely an obstacle to the expulsion of urine. The lesion is constantly situated at the membranous portion, varying in size and extent, and frequently seems to originate in inflammatory action, extending from the little sacs, which are often developed to the urethral parietes. Although slowly, the urine in these infiltrations frequently makes extraordinary progress, when it is considered that the natural canal is open, and that fistulæ are often also present. Our object should be to prevent the formation of fistulæ, which can only be done by incisions of an adequate freedom, to open a free passage for the urine.

5. *Urinary Abscess without apparent Perforation.*—These are cases in which an abscess, having all the characters of an urinary one from its locality and appearance, is yet found unaccompanied by any traces of a communication with the urethra. A certain degree of irritation, occurring at this deep portion of the canal, even when there is neither stricture or retention, may produce this. The accident is not rare, when a catheter is retained in the bladder, even without any intentions of dilatation, as in paralysis of the bladder, or after the high operation of lithotomy. Even the incautious use of a wax bougie in stricture has given rise to the same calamity, from the size being too suddenly increased, &c. Dr. Civiale has frequently found little abscesses existing between the prostate and rectum, evidently of old date, from their being lined by a mucous membrane. In the abscesses we are now considering, the most minute investigations have failed to detect the existence of an aperture in the urethra, and their occurrence must, therefore, be explained either by the transudation of urine through its walls, or by the propagation of irritation by sympathy or contiguity. Usually in these cases the urethra is very irritable, and bougies fail in rendering it less so, but this is not invariably so. The diagnosis is pre-eminently difficult, and they are often not detected even until after death. Sometimes the tumour is sufficiently appreciable, and sometimes after long lingering it takes on a sudden development. Although the swelling usually seems behind the stricture, the author has met with two cases in which it was anterior to it. When the abscess is superficial and circumscribed it is not dangerous, and frequently it is connected with small fistulous apertures in the scrotum, whence a fluid, resembling urine, exudes. Related to these abscesses are the collections of matter which form in the vicinity of the vagina, and between it and the rectum, and frequently lead to urinary fistulæ in women. These may arise from external violence, from any permanent irritation situated in the vagina, and occasionally from the act of coition, either by reason of disproportion of parts, or of the excessive sensibility of the organs. Several young women have been admitted into the Hôtel Dieu, from this cause, and in them the vagina has been found narrow and highly irritable.

6. *Abscesses occurring in various parts of the Body during the Treatment of Stricture.*—During the treatment of disease of the urinary organs, and

particularly those of the urethra, pains frequently attack the limbs, and especially the principal articulations. These are frequently mistaken as arising from rheumatism or phlegmonous erysipelas. Inflammation occupying at first a broad surface, quickly confines itself to a particular spot, and rapidly gives rise to the generation of copious fetid suppuration. These abscesses should be early and effectually opened.

*7. Urinary Fistulæ.*—The abscesses which occur without communication with the interior of the urethra, although their discharge is sometimes so abundant, are not usually accompanied by fistulous openings; and even when the walls of the urethra are injured by instruments, or other means, fistulæ by no means necessarily occur. The abscesses resulting from false passage rarely become fistulous, and those which follow the use of caustic are cured as rapidly as the common abscess, especially if they have been promptly opened. But in most cases of urinary abscess, the escaping of the urine from an aperture formed in the urethra, prevents the formation of a cicatrix. *Fistulæ* vary in almost every particular as of situation, extent, number, tissues traversed, and quantity of urine passing. They may be complete, establishing a communication between the urethra and integument: incomplete or blind, when their course has no exit or penetrates into other cavities, which is rare. It is an uncommon thing for the fistula to have more than one internal opening, but the author has seen examples where the urethra has seemed perforated like a sieve, all the apertures afterwards uniting to form a single passage. Numerous external openings, following a succession of small abscesses, are common, and Civiale has counted no less than 52 branches from the original fistula. These communications may sometimes extend to great distances, as to the hypogastrium, the thighs, or even the legs; but this state of things is only found in old, neglected cases. Commonly there is however but a single passage, which acquires a special organization, being lined by a new mucous membrane, while its walls form a ligamentous-like cord, to be felt externally, providing the induration of the surrounding parts be not too considerable. The change in these is not confined to any one texture, for, although the cellular tissue suffers in the first instance, the very bones themselves may become affected, and the author alludes to a case of necrosis of the pubis arising from contact with urine. The cellular texture becomes changed not only in density, but in volume, while it entirely loses its sensibility, so that it may be incised without occasioning any pain. When the urine escapes by a single aperture, there is seldom much induration around the fistula, even when it has existed many years, so that its own cord-like form may be felt; but when the fistulous tract branches out into many directions, great changes, in the cellular tissue especially, occur, producing great tumefaction and much irritation. Occasionally, the swelling and induration which have increased slowly, remain for a long time stationary, and the patient may live for a long while, suffering only some inconvenience in progression. If, during this period, we can operate favourably upon the diseased condition of the urinary tracts, the tissues, though slowly, may regain their natural condition.

The treatment has occupied much attention, but is still very defective, and numerous cases remain incurable. The original cause producing the



tumour has been too frequently forgotten ; and the operation of excising the fistulous passages would be often rendered needless if attention were more directed to relieving or curing the primary affection. When an operation has been resolved upon we must never forget the deceptive appearance caused by the tumefaction of the parts, and thus extend our incisions to a too trifling depth.

Urinary fistulæ are not rare in women. Cancerous or venereal ulcers, calculi, pins introduced into the bladder, wounds or punctures of the vagina, contusions of the urethra, &c., have led to them. The last cause, produced by the pressure of the child's head during labour, is the most common of all. In general the effect of such compression is only temporary, but, when it has been severe or long continued, a portion of the urethra may slough away, and a communication between it and the vagina become established ; such cases are erroneously called vesico-vaginal fistulæ, for, with few exceptions, the opening is not between the bladder and vagina, but between the urethra and vagina—a fact of importance in the curative point of view. A remarkable effect of the contact of urine with the other tissues is the contraction of the vagina which it causes, so as to leave in some cases the merest aperture. Narrowing of the vagina has been but little noticed by authors, although it frequently results from syphilitic inflammation, violence, abuse of coition, &c. A few months or even a few weeks are sufficient to develop it.

8 *Affections of the Spermatic Cord and Testis.*—Daily experience proves the extensive sympathetic influence of lesions of the urethra and neck of the bladder upon the generative organs. An inflamed testis may be produced by any urethral irritation, such as an impure coitus, stricture, or the action of some of the means intended for the relief of this latter.

In most cases of swelled testis there will be found to have been some preceding or coincident irritation of the orifices of the prostatic and ejaculatory ducts, whether arising from the use of instruments and injections, severe stricture, or the special diseases of the prostate. Under these circumstances emission is accompanied by great pain and is followed by great prostration of strength, which may continue for several days. Men, also, having stricture, or diseased prostate, are liable to pollutions, and these occurring without any provocative and often without even erection.

Chronic inflammatory action of the testis has not occupied sufficient degree of attention, arising as it frequently does, from the slighter urethral affections. Affections of the prostate, and neck of the bladder, often lead to atrophy, or to a stationary condition of engorgements. The application of caustic, and especially of scarification, to the urethra exerts upon the secretory and excretory organs of the semen a notable effect. The author had long observed in such patients the loss of power of erection, accompanied by pains in the testis, groins, &c. ; and noticed afterwards that these effects were proportioned in extent to the severity and frequency of the application of these causes of irritation. The testis sometimes, in these cases, becomes excessively and obstinately irritable. In all cases which have become relieved, this has seemed to depend upon the improved condition of the urethra induced by the use of temporary dilatation, taking care that it shall be pursued very slowly and cautiously.

We must defer the remainder of our analysis till next number.

THE CLIMATE OF THE UNITED STATES AND ITS ENDEMIC INFLUENCES, &c. &c. By *Samuel Ferry*, M.D. New-York, 1842.

THE multitudes of our countrymen who cross the Atlantic in pursuit of commerce, or led by curiosity, render a work of this kind very desirable, especially as no publication of the kind existed previous to this, except perhaps the vague remarks of Volney, more than 40 years ago. This volume is based chiefly on the statistical reports of the army, and embraces a period of 20 years, viz. from 1819 to 1839—the result of our author's labours.

The United States are spread over a vast space of 2,800,000 square miles—stretching from the Gulf of Mexico to the Russian and British possessions on the North—from the Atlantic on the West to the Pacific on the East!! This huge territory is traversed by two great systems of mountains—the more lofty of which (Rocky, Oregon, and Chippewyan) is a prolongation of the Mexican Cordilleras, extending to the Arctic regions—varying from eight to ten thousand feet above the level of the sea. The general face of the country presents every variety of mountain, valley, and table-land, composed of primitive, transition, secondary, and alluvial formations. Two mighty rivers, the Mississippi and St. Lawrence, drain the vast territory, South and North, while numerous subordinate rivers open on the eastern sea-board, forming great estuaries and noble harbours for commercial navies or warlike fleets.

More than half of the volume before us is dedicated to medico-statistical details of the various military posts and stations of the three great divisions of the States—Northern, Middle, and Southern. Into these we cannot possibly enter. But, from the second part, entitled “GENERAL DEDUCTIONS,” we shall endeavour to glean some portions of curious or even important information.

### I. PULMONARY DISEASES.

“Occupying, as we do, the eastern coast of a continent of the northern hemisphere, the human frame is exposed to the contrasted seasons of the most excessive climate. The extreme north has a climate in which cold predominates, vexed by winds that have passed over interminable snows; the south acknowledges the genial influence of the sun; whilst the middle vibrates alternately to both extremes. The climate of the United States is, in truth, remarkably inconstant and variable, ‘passing rapidly,’ says Malte Brun, ‘from the frosts of Norway to the scorching heats of Africa, and from the humidity of Holland to the drought of Castile.’ So sudden are the vicissitudes of weather in the middle States, that it may be truly said, we often ‘lie down in July and rise in December.’” 229.

From this description we should not augur well for the pulmonary apparatus.

From a table at page 231, we find that the average number of catarrhs in one thousand men, was 287 in the year; but varying greatly according to the quarter of the year, and the division of the territory. Thus in the

first or spring quarter, it was 98—in the second quarter 56—in the third, 42—and in the fourth, 86. In the northern and southern divisions of America, the difference was still more striking. In the northern parts of America, catarrhs averaged 552 in the thousand—in the southern, only 143, in the same number. The different quarters of the year, in the different States, presented great numerical differences also. The author strongly insists on the advantages of moving to the southern States, in cases of bronchial affections, the sequences of catarrhal attacks.

“The investigation of catarrhal diseases in reference to the agency of climate, and especially the seasons, is thus concluded; and the results, it is conceived, demonstrate conclusively the advantage of a winter residence in the peninsula of Florida in cases of *chronic bronchitis*.” 237.

### PLEURITIS AND PNEUMONIA.

In the three divisions of the United States, the annual average of the above complaints was 53 in the 1000 mean strength; but in some States, as in the south-western stations, it was as high as 92 in the thousand; while in other places, as the peninsula of East Florida, it only amounted to 39 in the same number of men.

### PHTHISIS.

The total annual average of this disease was nine in the thousand men; but varying in different stations from five to thirteen. The highest ratio was from Delaware Bay to Savannah; and the lowest was in posts remote from the ocean and inland seas. The peninsula of East Florida averaged nine in the thousand.

### INTERMITTENTS.

This malarious scourge plays an important part in the statistics of sickness in America.

The annual average of all the States is 368 in a thousand men! There is a variation in different States and stations of 36 to 747. From Delaware Bay to Savannah the high rate is shown. The coast of New England presents the small number of 36. The total average of remittent fever is comparatively small, viz. 101—varying from 24 to 196. Typhus fever is apparently rare, averaging only  $3\frac{1}{2}$  in the thousand. The average mortality from all fevers was  $4\frac{1}{2}$  in the thousand.

### DIARRHŒA AND DYSENTERY.

These are very frequent complaints, averaging annually 405 in a thousand men. The autumnal quarter shows thrice the number of any quarter.

We are unable to go farther into this valuable volume, as it entirely

defies analysis. We shall conclude with the following short extract relative to the fatal and wide-spread epidemic which frightened the two worlds in the form of cholera.

"The contagious nature of this epidemic is rendered still more questionable from the fact, confirmed with little exception, by the whole current of medical testimony in Europe, Asia, and America, that neither physicians nor those in constant attendance exhibited any peculiar liability to it. Medical officers have slept in their hospitals; nurses, to quiet timid females, have shared their beds during the night: the bed-clothes of patients who have died have been immediately used; and yet no bad consequences have followed. At Warsaw, Dr. Foy inhaled the breath, tasted the dejections, and inoculated himself with the blood of patients, without contracting the disease. There remains, however, another fact which seems the *experimentum crucis*, viz. that thousands of persons left infected districts, and died of the disease in various places, without communicating it to the surrounding inhabitants." 321.

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THE MADRAS QUARTERLY MEDICAL JOURNAL FOR 1841. Edited by Samuel Rogers and Alexander Lorimer, M.D., Assistant Surgeons, Madras Establishment.

WE are much pleased with Mr. Rogers' and Dr. Lorimer's Madras Medical Journal, and very much pleased with their able and indefatigable contributors—the staff and regimental surgeons of Her Majesty's and of the Indian army—for their statistical reports of corps and stations, and their endeavours to examine and illustrate the influence of tropical climates on European constitutions. In the all-important walks of medical topography and statistics, Madras, we regret to say, stands alone in our Indian empire, in so far as the medical authorities, the Boards, are concerned; and it is but justice to say that to Mr. Annesley is due the introduction of statistical reports in the South of India;—at the same time, we think he would have done better had he at once introduced the system of record so long in use in the Royal Service, as proposed by Mr. Martin in Bengal; for, without uniformity of system in examination, nomenclature, and mode of reporting, comparison—the balance-sheet of the profit account—is wanting to science.

The statistical reports of the troops of the colonies, prepared by Major Tulloch, and printed by order of Parliament, are now standard works of authority in medicine—referred to and quoted by every physician and surgeon, in every quarter of the civilized world, who would analyze and compare facts, bearing on the influence of climate, in its true and extended sense, on military health. The naval reports will command the general attention on like grounds, at the same time that we think their value would have been very greatly enhanced by the adoption of formulæ, similar to those of the Deputy Inspector Marshall and of Major Tulloch, thus facilitating examination and comparison.

We need not say how very much both the Reports last alluded to would

have been enhanced also in value, had it been in the power of the authors to exhibit results of equal certainty concerning the native population, civil or military, of the several countries to which their reports refer; and here we would remark with regret on the apathetic neglect of the Indian medical authorities of medical topography and statistics—subjects which we know their leisure, their opportunities for observation, and the institutions of police all over India, afforded them such very ample opportunities of cultivating—yet we have this subject untouched by the authorities, and had it not been for Mr. Martin's plan of 1835, ultimately carried through, he tells us, by the direct Act of the Government, the Empire of the East, in the sense we speak of, would have remained a sealed book to us. It is this we complain of; and, if not for the sake of science, for that of their very seats, we would recommend to certain gentlemen, members of boards, to bestir themselves. Boards are not in high estimation with the European public, whatever they may be in the Eastern hemisphere; and if it be found that they are incapable of following in the march of improvement, even at the respectful distance of 20 years, it may be found out, without much forecast or acuteness of perception, that Boards are in reality screens of the very most useless description.

We know that, shortly after the rejection of Mr. Martin's suggestion for adopting uniformity in reporting with Her Majesty's Service, the medical authorities of Bengal, were, with singular want of candour, patching up the old forms with a view to evade his plan, and deprive him of any credit that might arise from it; but, as might be expected, this patch-work of elementary and ultimate elements, all thrown clumsily together, proved only the incompetence of the framers, and a useless trouble to their subordinates.

At the very time, too, when the Board was thus performing its office of obstruction, its secretary was lecturing the people of India, in the columns of the daily newspapers, on the faults of the judicial system, and dedicating immortal poetry to "*The People of Scotland!*" This, we say, is too bad.

We do not desire to be severe on persons who have grown old in the practice of doing nothing, and to whom a very feeble exertion, in such a climate, might perhaps be detrimental; but we would ask the opponents of all improvement whether they imagine that the commander-in-chief or the governor-general, who is said to be very partial to the army and its interests, are likely much longer to suffer such a neglect as is here proved. We think not; and we repeat that, for the sake of their seats, if for nothing else, they had better bestir themselves a little; for the public will not now-a-days be satisfied with an enumeration of the numbers of pairs of leather breeches worn out, or of tons of tobacco consumed in smoke by their High Mightinesses of the Board in deliberation, while nothing is done. The cows of New-York made the roads while the council was deliberating; and in Bengal, we shall have our moral Sunderbunds cleared by other hands, if our High Medical Mightinesses of the nineteenth century do not order matters to better purpose. We must not allow New-York to "progress" so far a-head of Calcutta. But to be serious:—hitherto it has been the boast of the medical profession that, in addition to the just performance of its more especial and honourable functions, it has on all occasions taken the lead in every measure calculated to enlarge the region and the

empire of civilized life, reclaiming the savage and the wilderness. We are proud to assert that nowhere has this quality in our profession been more amply displayed than in India, and it grieves us therefore the more to witness its exception there, and in our seniors, whose duties and inclinations ought to prompt them to other and better conduct.

We have now much pleasure in returning to Mr. Rogers and his friends of both services, whom we very sincerely congratulate on the success of their useful proceedings. The general influence of the climate of India and the geography of disease receive much attention in the pages of the Madras Journal; but for the present we will confine ourselves to what is said in the third volume on the Morbid Effects of High Temperature—a most important subject: and if we shall be found to differ somewhat from our authorities, we can assure them we do so in all diffidence and kindness—knowing well the difficulties of the subject. This article is the contribution of Drs. Mortimer, Bisset, M'Grigor, Shanks, and of the Deputy Inspector Murray. It comprises the history of cases, post-mortem examinations, pathological observations, &c., by the several officers named. The subjects of disease were generally troops recently landed ("unacclimated") in India—recruits, volunteers, and sick; and there was in many, if not all the instances, "increased drinking;"—indeed, most of the fatal cases recorded in the 39th Regt. were those of men who had just previously been drinking ardent spirits. "The hot winds," says Dr. M'Grigor, "were nearly of the temperature of 112° Fahr., and caused a constricted feeling in the chest, in those exposed to it, as if of approaching suffocation; and this, together with the impression on the nervous system from the direct heat of the sun, caused a great many men to become ill. It is probable that the blood becomes expanded, and in this way acts like an urgent plethora, while the nervous axes, both ganglionic and cerebro-spinal, are simultaneously impaired."

The regimental reports are closed by "*Clinical Remarks*" from the late talented and experienced Dr. Murray, written just as he had received orders to proceed to Calcutta to succeed Dr. Macleod, the late Inspector-General of Her Majesty's Hospitals in India, of whom we had hoped ere now to see some notice commemorative alike of his distinguished military services, and of his most excellent character; but death is so rife with us in India, that men, even the most distinguished, pass away and are soon forgotten.

Dr. Murray begins his remarks by observing on the frequency of death from high temperature amongst British soldiers in India, and states that, in his opinion, the subject requires much more clinical consideration than he gave to it in his former remarks. "The variety of the symptoms arising from this cause, and the confessed imperfect knowledge of their pathology possessed by the profession in general, induced me to direct attention to this point, and to solicit further information respecting such affections from those who may have opportunities of affording it."

After enumerating the semeiology, as collated from the several reports, Dr. Murray thus concludes:—"Now there are three principal classes of disease attended with sudden death, viz. syncope, or death beginning at the heart; asphyxia, or death beginning at the lungs; and apoplexy, or death beginning at the brain; between the symptoms of which and the

foregoing histories, and the post-mortem appearances in each, it will be most important to draw a comparison, in order to determine the nature of the primary pathological effect of the cause under consideration."

Without stopping to question the justice of the above definitions, we would here call attention to the necessity of separating the effects of ardent spirits, used under a high temperature, from those of direct solar exposure in temperate persons, otherwise we shall be confounding together matters that deserve the most careful and separate consideration. It is quite well understood in the British army in India that, when we speak of a temperate soldier, we merely intend to convey the idea of a man not given to excess; and when we hear another soldier mentioned as "of rather temperate habits," we at once perceive that he may at the same time be in the daily habit of using so much ardent spirits as would very speedily destroy his officer. Now, these two descriptions apply to the very smaller portion of the men who died, as here described, from the effects of high temperature. The rest were men whose habits of life have already been pointed out—in short, men given to excess in drinking.

We do not make these remarks to discourage inquiry—far from it; but we would *direct* inquiry, so as to lead to discriminating and accurate results. We need not remind our zealous and able brethren in the East, of the varied, numerous, and extended examples furnished by the medical history of our army, all over the globe, to show how great is the exposure, how great and continued the labour under a tropical sun, and how high the temperature that has been sustained with impunity by the British soldier, when under the conservative influence of what Sir John Moore calls the interior economy and discipline in corps; in other words, of well-regulated habits of life. The history of Sir John Moore's hill campaign in St. Lucie—the account given by Dr. Robert Jackson, of the soldiers of the Royal Scots who drained the marsh around Fort King George—the numerous instances given by the same physician of forced labour in the tropical sun by British and French prisoners of war—the marches of Napoleon in Egypt and Italy—the march of Sir David Baird across the desert from Cosseir to Cairo—many of Wellington's forced operations in the Peninsula—the campaigns of Macdonald and Suchet in the Eastern provinces of the same country;—in short, there are examples without number of efforts the most extraordinary, and under the greatest disadvantages, being made by soldiers of various countries without apparent injury to health. The conclusion we would come to then, is this, that we are not warranted in drawing general conclusions from partial instances, and that a more detailed and distinct information is necessary in order to enable us to separate what is due to one cause from what is due to another. Our opinion of the cases related in these reports is, that to heat alone can be referred but a moderate portion of the evil result, and that, without the drink and other stimulation from diet, we should have had but few deaths; in short, that more is ascribed to mere temperature without sufficient reference to other influential causes, than the case warranted. The title of Article V. is therefore, in our opinion, objectionable, because calculated to divert the mind of the inexperienced from the true relation of varied cause to the effect. The power of enduring heat, *under a sudden effort, or while the mind is keenly occupied, possessed by British soldiers is*

*India, even beyond the natives*, has often been remarked; and the same quality has been exhibited in other climates, and under opposite extremes of temperature. Our own impression, after a lengthened experience and a careful reference to statistical record, is, that to *long and continued exposure to a high temperature, conjoined to a habit of intemperance*, must be ascribed more than half the deaths that occur amongst British soldiers in India—a strong reason for limiting the period of service in the East, and for reducing it to something like what has been done for the troops in the West.

OBSERVATIONS ON THE HILL FEVERS OF THE SOUTHERN PENINSULA OF INDIA; WITH SOME REMARKS ON MAGNETISM AND ELECTRICITY AS A PROBABLE CAUSE OF FEVER AND SOME OTHER DISORDERS. By Dr. Heyne, Madras. Art. I. No. X.

We have ever considered the geological nature of the soil as one of the most powerful of the causes of physical climate; and in the last edition of the work on Tropical Climates by the senior editor of this Journal, assisted by Mr. Martin, will be found a sketch of our sentiments on that head, referring more especially to the climate of Bengal. In the article mentioned we have referred also to the various supposed sources of the electricity of our atmosphere; but in truth the subject is an obscure one, and in the present state of our knowledge we refer with pleasure to such an ingenious and elaborate article as Dr. Heyne's, were it for no other purpose than to direct inquiry, where facts are so difficult of being obtained.

After enumerating the symptoms of the hill fever, Dr. Heyne observes that the ordinarily received opinions as to the vegetable or marshy origin of fevers will not here hold, for that "the hills are here not more woody than in other healthy places; some indeed, where the epidemic of 1808 and 1810, as well as the endemic, were most destructive, are quite naked of trees, as Diudigal, Madura, and the rocks west of Seringapatam."

"Now, if it should be found, that this fever exists *constantly and invariably* among *certain description of hills*, when others of a *different composition* are as *constantly free from the same*, would it not become reasonable to suppose that the *nature or composition* of the rock itself must furnish the cause of the calamity?"

The hills where it is found to prevail, appear, at first view, to be quite harmless, as they are a *granite*, which is the most common rock-kind on this globe. They contain, however, besides *quartz, felspar, and mica*, a great proportion of *ferruginous hornblende*, which, by its disintegration or separation from the rock, becomes highly magnetic, and in which, I suppose, the *cause resides* which produces this fever, besides a great train of other disorders. This iron hornblende occurs in such quantity, that all rivulets, public roads, indeed, all hollows along these hills are filled with its *sand*; from which, also, all the iron in this part of the country is manufactured. This granite is remarkable for its disintegration, as it not only separates during the hot season in large masses of many tons, but crumbles as easily into its composing particles, and is found as sand in great abundance, not only near every rock, but near every stone, from whence it is carried by the torrents during the rains to the lower parts of the country, and thus forms the particular mark by which these hills may be distinguished from all others. It is generally not attracted by the magnet *when united* to the mass,



even when it occurs as in hornblende state, or greenstone, in the greatest abundance, but after it has been separated it is attracted as much as any iron filings. This may be owing to the incipient state of oxydation, or more likely, to the development of magnetism by the high temperature to which it has been exposed in the hot season, which also may have weakened the cohesion of the rock, and caused its disintegration in the mass.

Hills of this description form the principal ranges of the Ghanta, as far at least as the Godavery; they predominate also among the smaller, and in single hills and rocks in the low country, so that they might be taken for the exclusive rock formation of this country. However, fortunately, this is not quite the case. They are easily recognised at a distance by their very rugged and abruptly pointed appearance, and the great steepness at their tops. The ranges of this formation are also very interrupted, and generally consist of rows of single hills, although to the southward, I have found them also connected at bases, and in triple and quadruple ranges."

Dr. Heyne then gives an excellent topographic description of the hills "which have rendered themselves known to Europeans for the malignity of the fever," and after that of such as are "*as constantly free of the hill fever.*" This is the right kind of topography, but for obvious reasons we cannot here enter into it. The hills where the fever is "totally unknown," Dr. Heyne describes as "*primitive* trap, which consists of *quartz, felspar, and REAL hornblende.*" He then adds that the epidemic fever of 1808 stopped short at a range of hills of this latter composition, in the Coimbatore district—a remarkable fact.

"These two ranges of trap proceed with very little or no admixture of iron stone through the whole Baramahal, from Nameul to Darampoory and Vellore: the rocks are sometimes compact hornblende and greenstone, or basalt, all belonging to the same formation; but here and there hills appear among them of iron granite, which stand in connection with other ranges of that description in that province, both East and West of that valley, which have the hill fever as virulent as in other parts of the country, where whole ranges of these hills occur.

A most remarkable instance illustrative of the above facts, and of my deductions from them, I found at Tripatoor, which lies in the above valley, close to a large table-land, the rock of which is sand-stone. I asked there a respectable native whether any such disorder as fevers were frequent in the country, but received in answer, 'No, thank God, not within ten miles of this place: at Savadymalle, a hill fort where no man can live two days without getting it.' To this place a person was despatched with the simple order of bringing two or three stones from the rock of the hill, and some sand as might be found on the road. The man returned, and brought pieces of a rock composed of red felspar, quartz, and plenty of ferruginous hornblende; and the sand of the road consisted entirely of magnetic sand and particles of felspar.

I must name now the Pulicat hills, among which, as far as they extend to the southward, (Chittoor) the hill fever is totally unknown. I was particular in my inquiries on this subject, in the beginning of this year, when among them. They consist entirely of flinty slate, and are bare in some places as they are woody in others, and as lofty and as low as the granite hills.

I come now to a country and hills where I have lived myself for some years, the Cuddapah District. It is divided from Gurrumcondah on the South, and from iron granite and the hill fever, by a range of flinty slate. The same bends there to the northward, where the ranges thicken as they advance, and leave narrow valleys as far as Cummuur, and further up the river Kishna. The whole or most of these hills belong to the clay-slate formation, some are calcareous, all

however are free of the hill fever. Other fevers may occasionally be seen, such as simple intermittents and bilious remittents, but they do not, like the hill fever, run into a typhus, and the cautious may easily guard against and get rid of them.

This is the largest extent of inland country which I know to be free of the hill fever, viz. from Cuddapah to Kishna near Chintapilly, a place that has been at all times dreaded for its fevers. There, the iron granite hills prevail again. To the westward of Cuddapah, the healthiness of the country extends to the Ganjecottah hills, which belong to the flötz trap formation, consisting of sandstone, limestone, jasper and hornstone pebbles cemented together, and which are perfectly free of magnetic ironstone.

Bababudden is another range of hills which is remarkably free of hill fevers, although it lies between places of notoriety for such, as Seringapatam to the S. W. and Chittledroog to the N. W. and Naggury to the W. an unwholesome country amongst the Ghauts. It belongs to the *clay-slate* formation, and *active magnets* are found in large depositions on them. It rains on them for six months in the year continually, when plants keep fresh and alive in the open air for many days after they have been taken out of the ground, or broken off the stem. In fact, my observation, viz. that the hill fever on this coast exists *exclusively* among the hills of the granite formation, or where iron-stone is found in large quantities, will be confirmed, the more it is brought to the test.

A principal question arises now, but which, and the answer to it, I presume will be anticipated by every medical man, viz. what can be the particular principle in that rock which should have so powerful an effect on the human frame? I readily ascribed it to the *magnetic* or *electric fluid*, which seems to exist in the greatest abundance in the iron hornblende, and is disengaged in great quantity, in the hot season.

The electric and magnetic fluids are modifications of each other—a principle now pretty generally admitted. It exists in the air, and that it does in the earth and in the minerals, need scarcely be mentioned, nor are the animal and vegetable kingdoms less indebted for its influence, indeed it is the *anima mundi*. It can be accumulated under certain circumstances in the air, and there is no doubt, that as in magnetism, so it is in iron, and in some other minerals; and as it is elastic, it can be also dissipated from the place in which it is confined. Of course where magnetic iron abounds the electric fluid, whether in its positive or negative quality, will make, under favourable circumstances, its escape.

This must be on common physical principles the case, *when the temperature is more than usually increased*; the hottest season therefore when the rocks exposed to the meridian rays of the sun are raised to the accumulated heat of  $220^{\circ}$ , is the epoch when the fever rages most, (which we suppose to originate from the greatest development of magnetism). It is known that a high degree of electricity can be raised, in certain minerals by heating them merely, and according to my experiment, the hornblende which is found in this granite becomes magnetic on being heated, which before showed no magnetism whatever. It stands also to reason, that the first rain which cools the atmosphere down to  $74^{\circ}$  must put a stop to the discharge of that principle, and to the farther cause of the fever, for *'cessante causa tollitur effectus.'*

It is generally believed that so powerful a principle has, or must have a great influence, on the animal constitution, although electricity has hitherto been tried, but with very partial success, as a remedy against some disorders; and if I am not mistaken, with more where it has been *abstracted*, where sparks have been elicited, than where they have been imparted. Magnetism has also been tried, but oftener ridiculed by the medical world in England, particularly that which is called animal magnetism.

In my humble opinion it is here the particular magnetism or electricity of the iron granite, without however attempting to determine whether it is the vitreous or resinous; for hornblende in primitive trap contains nearly as much iron as

that of the granite; the iron also in other minerals, as in the magnetic iron ores of Bababudden, and the carbonated iron ores of that country, possesses as much magnetism, even in its active state, yet do they not prove themselves in the least hurtful to our constitution, as that of the iron granite hills; of course if it be electricity at all (as it should appear) it must be that particular modification of it, which is inherent to the iron sand of the granite of this country.

It has been observed by some practitioners, (Mr. Searman) that the night air in those places, where such fevers occur, is particularly to be dreaded. This seems to militate against the new doctrine, but is actually in support of it; for electricity, as is well known, can be confined to clouds for a considerable time, and can be kept at a certain spot by attraction (as in the *ignis fatuus*), and of course the same principle, under a different form, but from similar causes, may be kept floating in the air for some time at the particular spot where it has been discharged, and, if it should remain till night, it must be condensed by the coolness of it, and hence will be imparted, or come concentrated to those who expose themselves to it at the time.

The natives are particularly fond of sleeping in the open air with a very slight or no covering, hence one cause of their being oftener subject to those fevers than Europeans.

A moist atmosphere destroys electricity (to use the common phrase) or abduces it; it is therefore but natural, that the first strong rain in the season, besides the cooling of the rocks, should remove the sickness which is the consequence of it; on that account also, in a season prior to the hot, (in January and February) the fever has been restrained by the same circumstance. The heavy dews, among our Ghauts, which some have even considered as the forerunner, or as a powerful cause of these fevers, have absolutely retarded or prevented them. For it should be known and remarked, that these months are reckoned the safest to venture among the Ghauts and to remain there."

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"It may be observed, further, that all epidemics in this country are preceded by uncommonly heavy rains and some lightning: such was not only the case in the fever epidemic of 1803 to 10, as already said; but such existed before the appearance of the present cholera morbus in Bengal, and now at Madras. I do not suppose, however, that they are in consequence of the rain after it has fallen, and the inundations which have followed it, but from the superabundance of electric matter which caused the rain, or in fact from the *same cause* (electricity) derived from a different source.

I would advise, as a precaution, to avoid if possible the living near a hill or rock about which a quantity of magnetic iron sand is found. The distance of two miles would be quite sufficient in common cases, as it has been observed even at Courtallum, where the village, that had suffered much from the fever, has been removed with the best effect to that very distance.

I could now close my writing as I have said nearly every thing which I know at present on the subject, but I will suggest a few hints, which strike me, will not inaptly come from me, although I am convinced they would soon occur to others, and would be most likely better expressed.

It appears in the first instance to me probable, that electricity in general, is the principle which has most influence on our health, and on our life. We live in it constantly, it penetrates every thing, it is as a constituent of every thing, &c. &c. It may abound in some situations,—it may be deficient in others, each of which, must have peculiar effects: the positive or vitreous, the negative or resinous may predominate; either must have its *peculiar* influence. In the preceding pages we have seen what effect it has when it occurs in great quantity from magnetical iron stone (I believe the resinous), it is probable that it may have similar consequences from whatever other sources it may be derived. The fever in the Northern Circars, although it might not be owing to the electricity

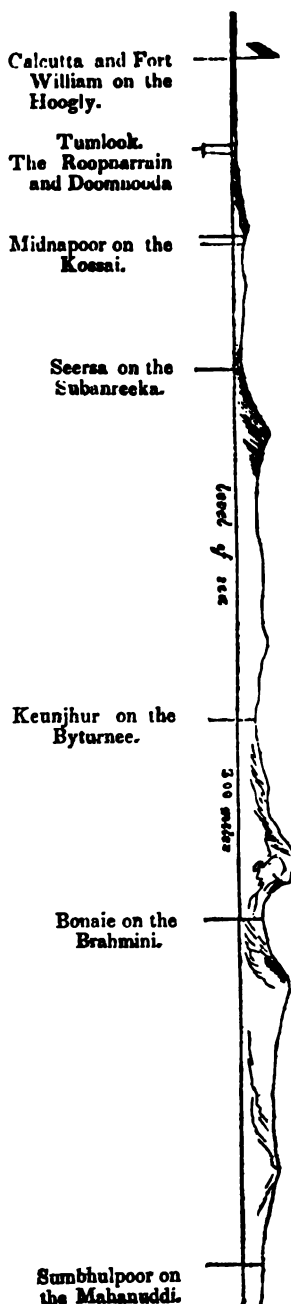
from the minerals of the country, may be to that of marshes which may be easily ascertained; in its attacks, it seems to be like the hill fevers, particularly in its tendency to run into a typhus, or into enlargements of the spleen, &c. It appears to me also very certain, that the fever in fens of some countries, in the South of England, and the Walcheren fever, are engendered in the same manner. I have for the latter supposition, at present, no other proof but the frequency of the *ignis fatuus* in these situations, (certainly but an electrical phenomenon) and the account of the fever itself, which seems to resemble our hill fever in many particulars, as do the marsh fevers of Bengal and Sumatra, which quickly run into a typhus, and affect the spleen violently. In further support of this opinion, I will say, that Abbé Nollet, or Dr. Wilson, or even the gentlemen of the medical committee, have long ago suspected that electricity, which we know to exist there in some abundance, must be the real efficient cause. That the different gases, as hydrogen and carbonic, or the deficiency of oxygen, cannot be blamed, has been frequently demonstrated by eudiometrical means, which indeed have generally proved, that the air in the most unhealthy places is as pure and as full of oxygen as in the most salubrious situations. To conclude this subject, I must say, that in my humble opinion *all fevers* are in some degree engendered by a superabundance of electricity, either of the local situation or the habitude of the individual."

After these lengthened quotations, we need hardly say that we highly appreciate the laborious research of Dr. Heyne, in which we have no doubt that many of our brother officers in India will follow him. More than twenty years ago, we observed that the abrupt mountain ranges which are crossed between Midnapore in the province of Orissa (Bengal Presidency) and Sumbhulpore on the Mahanuddi, in the province of Gundwana, are throughout of the ferruginous nature described by Dr. Heyne. They are unequalled for their insalubrity, and the prevalent fever, as we well know from personal suffering and sad recollection, is the most severe of any of which we have experience in that or any other portion of India; indeed, there are few survivors from it, whether natives of Hindustan or of Europe. The following is a rough descriptive sketch, from memory, of the countries here referred to, by an officer of the Bengal Army.

For the present we take leave of our esteemed editors and contributors of the Madras Medical Journal, thanking them sincerely for the valuable information derived from their joint labours.

We wish them all success in their interesting and important vocations; and we are very anxious to discover something of the same enterprise rising up in the great sister Presidency of Bengal, where we know there is no want of opportunity or of talent to cultivate it. An incubus has borne heavily on the service for a lengthened term, but let its members exert themselves, and it will speedily give place to more energy—more usefulness at home, and honour abroad.

By the way, why was not the paper of Dr. Heyne given to the public at the time of its presentation to the Board, in whose dark recesses we are told it has remained "long hidden from the public eye"—in other words, *screened*—a mode of conducting public duty to which our experience has made us but too familiar.



High land of Midnapoor between the Roopnarain and Kossai rivers. Iron clay resting on decomposed primitive rock and lithomarge—soil and water strongly impregnated with iron oxide—pulmonary and cerebral diseases common here.

Shingle and sandy tracts—quartz and hornblende—oxide of iron—forests of stunted saul and Assam—fevers prevalent.

Granite, sienite, quartzose rocks, steatite, and serpentine hornblende—this is the first range running North and South, varying from 500 to 2,500 feet, covered with dense forests of saul and other trees, and the climate deadly—water very scarce, impregnated with vegetable and mineral matter—iron ore in great abundance, the soil red with its oxide.

This country is very deadly; the soil chiefly red from iron oxides.

Keunjhur and Mahagirri hills, sienite, gneiss, talcite, hornblende, kidney-iron ore and iron in every shape, it affects the needle—deadly climate except on the heights, which vary from 1,700 to 4,000—gneiss—gold found in the rivers.

Baumurra hills—gneiss, quartzose, iron ore in abundance—some very fine falls of water strongly impregnated with calcareous matter, leaving stactite—considered wholesome—height 1,200 ft.?

Height of this range about 300 feet above Sumbhulpoor, or 800 ft. above the sea?

Gneiss formation, talcite—much iron, though less than in the other ranges—diamonds and gold worked for—matrix red clay and sand—height supposed to be about 500 ft.—climate very unhealthy in the hot season—to strangers deadly.

## Periscope ;

OR,

### CIRCUMSPECTIVE REVIEW.

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"Ore trahit quodcunque proteat, atque addit acervo."

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#### Notices of some New Works.

OBSERVATIONS ON THE ADMISSION OF MEDICAL PUPILS TO THE WARDS OF BETHLEM HOSPITAL, FOR THE PURPOSE OF STUDYING MENTAL DISEASES. By *John Webster, M.D.*

WE believe that there are very few modern physiologists who now consider insanity as a disease of the *mind alone*, but as a disorder of some material structure, more especially of the mind's instrument—the brain. Sensation, volition, and reflection, are just as much functions of the brain and nerves, as secretion of bile is the function of the liver—or circulation of blood the function of the heart and arteries. It is very true that the primary *cause* of insanity may not always be in the brain. It may be in the liver, the stomach, or other parts ; but the brain must be disordered, either primarily or sympathetically, before insanity can manifest itself. The functions of the brain, like those of other organs or parts may be *disordered*, long before the microscope or scalpel can detect changes of *structure*—which, after all, are consequences, not causes. These are truths which we believe are almost universally admitted, and yet they have not led to the legitimate conclusion that, insanity being a disease or disorder of the mind's instrument—the brain, wherever located may be the original cause—so the complaint ought to be taught in lectures and studied in hospitals like any other corporeal malady.

Dr. Webster has, therefore, done the state, as well as the profession, a service by bringing this subject before the public, in the sensible pamphlet under review. The following passage from Sir W. Ellis, is so much *ad rem*. that we shall here quote it.

"It is perfectly inconsistent with common sense to suppose, that a man shall intuitively know how to treat insanity. We have seen, that although in the greater number of cases it is attended with the same general result, yet it assumes most varied forms, and great care and discrimination are required in the treatment ; indeed, it is universally acknowledged to be a most difficult and mysterious disease, and yet it is almost the only one on which the medical student receives no particular instruction. In his attendance on the hospitals, he will, in all probability, have met with almost every other variety of disease which afflicts human nature ; at all events, his lectures will have supplied him with some information as to their treatment ; but I believe that my friend and colleague, Dr. (now Sir Alexander) Morrison, of Cavendish Square, is the only lecturer in London expressly on insanity. Indeed, excepting as being incidentally touched upon in the lectures on forensic medicine, it appears almost entirely neglected in the course of a medical education ; and, as the subject does not form a branch of examination, the pupils naturally employ their time in those studies which will be directly avail-

able, and assist them in the obtaining their medical certificates; the result is, that professional men, in other respects well educated, commence practice almost in a state of total ignorance on the subject. This is an evil from which every individual, whatever be his rank and fortune, is liable to suffer in his own person, and in that of his friends; and a man of ingenious mind can hardly be placed under more painful circumstances, than to find the father or mother of a family in a state of insanity, entrusted to his care, and to feel conscious that upon him depends the restoration of the patient to reason and happiness, whilst his want of acquaintance with the disease renders him unfit for the task, and he knows not where to apply for advice. This is by no means an imaginary evil, it is one of frequent occurrence, and numerous are the instances where amiable and valuable members of society are consigned for life, to a perpetual banishment from their friends in the gloom of a mad-house, solely from ignorance on the part of the medical adviser. This ought to be remedied."

But it will be said, "Oh! insanity is a disease of the mind, and must be cured by moral means." We deny the fact, or rather the fiction. In the first place, insanity is *not* a disease of the mind, but of its organ. In the second place, although moral means are, perhaps, more important auxiliaries in the treatment of a complaint affecting the organ of thought than of one affecting an organ of circulation, secretion, or absorption, yet still they are only auxiliaries, and will not succeed in one case out of ten, without physical remedies. And how are the causes and phenomena of the disease, or the adaptation of remedies to be learnt but by the same process as in other corporeal ailments—namely, by precept and example?

That the curricula of the medical corporations include lectures and clinical instruction in this branch of medical science, it is not to be expected that students will search for information beyond the sphere of their ordinary teachers, or that lunatic hospitals or asylums will open their doors to the clinical inquirer. Since Dr. Webster wrote this brochure, we are happy to see that a course of lectures on insanity has been instituted by Dr. Conolly, and we sincerely hope that this auspicious beginning will be followed by the opening of wards for clinical observation at the great institutions, metropolitan and provincial, dedicated to the use of insane people, of both sexes.

Dr. Webster properly observes that Bethlem Hospital is peculiarly well calculated for affording excellent clinical instruction. The wards contain generally from 310 to 340 patients—and the wards are designed for the reception of cases that are probably curable—not a receptacle for those who are beyond all hope of recovery. The objection made by governors, that the sight of pupils going round with physicians might excite, and thus injure the insane, is quite futile. No such effect is produced in general hospitals, even where patients are suffering from violent or acute diseases—or undergoing formidable operations. We quite concur with Dr. Webster in the following remarks.

"So far from considering, that the judicious admission of pupils, and of young men who are about completing their preliminary studies, to the wards of Bethlem Hospital, would prove injurious to the inmates, I believe, if properly regulated, such permission would even sometimes act advantageously. This opinion is founded upon the supposition, that the regular visits of the physicians, although accompanied by pupils, would in some of the patients tend rather to distract the attention from their false reasoning, whilst in others it would appear as if bringing them in contact with the external world, and so produce a more favourable impression upon their disordered imaginations. Besides the appearance thus given to the establishment, of being somewhat like an ordinary hospital, for the restoration to health of its inmates, instead of a common mad-house, in which all contact with the world outside its walls is generally cut off, might have a favourable impression; especially as it is a well known observation, that the fear of being placed in a lunatic asylum, often exerts an

injurious influence upon the minds even of the insane; to say nothing of the very disagreeable associations, which it produces upon friends and relatives."

Dr. Webster concludes his pamphlet with some judicious remarks on the management of the insane at this period as compared with that pursued at the beginning even of the present century. Whilst he properly condemns chains, dark cells, handcuffs, &c. he candidly acknowledges that—

"When an insane person is either dangerous to others, or likely to inflict injury upon himself, restraint may, in that case, become necessary."

This is all we have ever contended for, in the way of restraint. We return our best thanks to Dr. Webster for his sensible and well-timed letter, a second edition of which is already published.

#### FIRST AND SECOND REPORTS OF THE MEDICAL MISSIONARY SOCIETY IN CHINA. Macao, 1841.

A few years ago an hospital was opened at Canton, and occasionally at Macao, where, up to the date of report, more than six thousand sick received relief. Ophthalmic diseases are very frequent in China, and these formed a large proportion of the cases treated.

"A large number of them have been restored from partial or total blindness to all the blessings of good and useful sight. The almost uniform success of the medical and surgical treatment at the institutions of the Society, the growing confidence of the Chinese, which is the natural result of this, their grateful sense of the benefits conferred upon them through the skill and philanthropy of foreigners,—are so many powerful encouragements to perseverance in the pursuit of the noble objects for which we are united. And so persevering, we may look forward with confidence to the time, when, having afforded to the intelligent youth of China a good medical education, we shall no longer confine our efforts to the small circle within which our residence is now circumscribed, but may be enabled first to send forth our practitioners, and ultimately perhaps to follow them ourselves, through the length and breadth of the empire."

The chief medical officers of these establishments are Dr. Parker, Mr. Lockhart, and Mr. Hobson, to whom great praise is due for their zeal, talents, and humanity. Their exertions will do more to harmonize the two mighty empires of Britain and China than all our naval and military expeditions, however brilliant or victorious. The following passage from a report of Dr. Parker's is interesting.

"Often has the sincerest gratitude been felt towards the benevolent members of this Society, who have procured such an asylum for the afflicted Chinese, and to the respected President whose judgment first selected the premises, when,—walking through its capacious and numerous apartments,—I have witnessed the comfortable accommodation afforded to the inmates, to many of whom it seemed almost a palace, in comparison with the narrow cells they call their homes. The building is capable of accommodating two hundred patients. It has nineteen spacious rooms on the second story, well ventilated; and as many corresponding ones on the ground floor; a garden, and extensive compound, with three wells of water—in the rear; and a yard in front. The building is of brick, strongly built, and the whole of the ground (say a third of an acre) belonging to it, is surrounded by a substantial wall. It is in a healthy locality, overlooking the waters of the inner harbour, and having good access both by land and water."

Notwithstanding the prejudices, ignorance, and hatred to foreigners which the Chinese exhibit, it appears that they pay the greatest respect to English medical men, and place in them the most implicit confidence. Crowds of Chinese, of both sexes, afflicted with all kinds of disorders, are seen soliciting aid in the attitude of humility and respect, listening to advice.



"To behold a female, unaccompanied perhaps by a single friend or relative, brought in and tied hand and foot to the operator's table, and there submit to a most painful operation, without uttering a sigh or a groan, teaches us, in terms that can neither be misunderstood nor prevaricated, that a Chinese, upon proper grounds, is able to exercise the most unbounded confidence in the wisdom and goodness of the stranger."

#### CHUSAN.

This island, now so famous, having come under the range of British influence, it was deemed desirable to establish a hospital there, which was completed in February, 1841, under the direction of Mr. Lockhart. No less than 3502 patients were attended to—sometimes as many as 200 old and new cases presenting themselves in one day! At first, indeed, the inhabitants could not comprehend the object of the hospital; but attention to some of the sick met in the streets, soon enlightened their understandings, and they flocked in numbers to the establishment for medical and surgical relief. Several were attended also at their own homes, by which a nearer insight into the domestic habits and economy of this curious people was obtained than could have been done under any other circumstances. Patients, in a little time, came from towns and villages far remote from Chusan.

In the south-west monsoon the weather was very hot, and sometimes oppressive—the thermometer standing at 90 in the shade by day, and 72, on an average, in the night. In the north-east monsoon, on the other hand, the weather was cold and clear. In December, January, and February, 1840, the thermometer often stood as low as 25° in the night, with much ice on the ponds. Very little snow fell in Winter. The position of Chusan is lat. 30 North, and long. 122 East—the climate comparatively mild. Fevers are very prevalent among the natives, all over the island, but especially in the valleys, where the fields are kept long under water. In 1840, however, disease prevailed more extensively than usual—a circumstance tallying with what occurred among the natives of Walcheren during our disastrous expedition in 1809. Some parts of the city are almost pestilential—and malaria exists in almost the whole of the valleys, from the excessive moisture on the surface of the ground. It was no wonder that the laborious duties of our soldiers and sailors—their exposure to the sun by day and the dews by night—their bad provisions—the malaria from the fields, and other causes, should have engendered fevers, dysenteries, and other complaints in abundance.

Mr. Lockhart thinks it very questionable whether Chusan would be more unhealthy than any other place of similar latitude, were it not for the cultivation of the rice by means of stagnant water. By drainage, or even opening the flood-gates that dam up the streams, the island would soon become dry and sufficiently healthy.

INTERMITTENT FEVER prevails to a great extent among the inhabitants. Quinine generally checked the disease effectually. The Chinese physicians employ tiger's bones, ginseng, &c. with no very great success according to their own confession. OPIUM SMOKING prevails to a considerable extent among the better classes of society in Tinghae. ELEPHANTIASIS is very common, and often commits fearful ravages. OPHTHALMIC diseases, however, are more prevalent in China generally than in any other country of the world. It is difficult to account for these morbid features in the physiognomy of various nations. A friend of our's, when puzzled by such questions, generally remarks that such occult causes can be best explained by a person of the name of FELIX.\* Our

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\* FELIX, qui potuit rerum cognoscere causas.

author thinks that one cause of the great prevalence of ophthalmic diseases is the frequency of inflammation of the eye at the changes of the monsoons.

"2dly. The injurious effects of a practice which is commonly followed by the Chinese barbers of everting the lower lid, and rubbing its inner surface gently with an ivory or bamboo instrument, shaped like a small scoop, which they also pass under the lid and deep into the inner and outer canthi; this they call 'washing the eye,' and the declared intention is the removal of any portion of mucous that may be lodging on its surface. It is a very common habit and performed daily in the barber's shops, where, after the head has been shaved, the man sits composedly as if enjoying exquisite delight, while the barber is thus *operating* on his eyes. If the person's eyes be examined after this process, they will be found to be very red and in a state of considerable irritation, and in process of time chronic conjunctivitis supervenes, and this being considered as the result of the eye not being sufficiently cleansed, the practice is persisted in, and the conjunctiva of the lid becomes covered with granulations. In other cases, the conjunctiva becomes indurated like thin parchment, the tarsal cartilages contract and induce entropium. Other diseases also result in process of time, variously modified according to circumstances; as, for instance, exposure to the cold wind inducing an attack of acute inflammation of the organ."

Verily our Chinese *neighbours* have strange notions of the pleasures of cleanliness! We anticipate much benefit, in more ways than one, from such an establishment as the hospital in question. Should a peaceable and commercial intercourse between the Celestial and the British empires be once more effected, the Medical Missionary Society will form a strong cementing link between the two nations—and one that is little likely to be broken by political or mercantile squabbles.

TIC DOULOUREUX, OR NEURALGIA FACIALIS, &c. &c. THEIR SEAT, NATURE, AND CAUSE, WITH CASES. By R. H. Allnatt, M.D. Octavo, pp. 184. Churchill, 1841.

This is a neat resumé of all that is *known*—we will not say all that has been *written*, on the subject of neuralgic affections. The *seats* of this painful, and somewhat mysterious malady, are nearly as numerous as the various organs and structures of the body. The skin, the muscles, the ligaments, the membranes, the nerves, the viscera, nay, the bones themselves, may and do become the theatres of its agonizing tortures. That dreadful and often fatal disease, angina pectoris, is not improbably the *result* of neuralgia of the heart itself. M. Piorry has described a curious species of tic, namely, "*neuralgie irienne ou ophthalmique*,"—the pain commencing, as he supposes, in the nerves of the iris, and attacking persons who live in dark apartments—who read much—and whose occupations require the eye to be fixed on minute objects. But, in fact, it would be endless to attempt an enumeration of the Proteian forms of this insidious and cruel malady. Neither need we follow our talented and industrious author in arranging the catalogue of "*unsuccessful modes of treatment*," from the carbonate of iron down to the solid steel itself, in the shape of the scalpel.

At page 27, our author begins to broach his own doctrine or creed, by joining Bellingeri in the opinion that the trifacial is a vital nerve, from its origin and structure—in short, that it closely resembles the nerves of organic life—and consequently is a nerve of involuntary action. We all know how frequently it is the seat of neuralgia. Sir Charles Bell attributes this to "the influence of the sympathetic nerve," with which it sympathises so closely. Dr. A. next gives a neat *coup-d'œil* of the anatomy of the great sympathetic, exhibiting its vast connexions with all the other nerves of the body. In respect to its physiology, the

older anatomists were too limited when they ascribed its origin to the fifth and sixth pair of nerves.

"But subsequent researches have proved this view of its origin to be too limited, and it is now generally admitted that, as expressed by Sir C. Bell, 'it has innumerable origins, and a universal connexion with the other nerves through all the trunk of the body. Many of the viscera to which it is distributed are entirely independent of the will, and have functions to perform too essential to life to be left under the influence of the will. The sympathetic nerve is thus, as it were, a system within itself, having operations to perform of which the mind is not conscious; whilst the extent of its connexion occasions, both in health and disease, sympathetic affections not easily traced.'"

The causes of tic have given rise to great diversity of opinion. We believe that the majority of practical observers are inclined to the opinion that it is attributable to gastric, or gastro-intestinal irritation. So early as 1771, Rahn came to this conclusion, and various physicians and surgeons since that period have adopted his views. We need only select Abernethy and Sir Charles Bell as examples. The following passage will show Dr. Allnatt's own creed.

"Facial neuralgia and disorder of the chylopoietic viscera almost invariably coexist, and it is often exceedingly difficult, nay, almost impossible, to determine, from the statement of the patient himself, which may have been the primary affection. I have scarcely ever seen a case which was unaccompanied by dyspeptic symptoms. Some of these may have been obscurely developed, but I am firmly of opinion, from observations which I have been enabled to make, that tic douloureux, or facial neuralgia, arises in every instance from an unhealthy condition of the digestive apparatus."

But we must lay aside all speculations, theories, and doctrines, and come to practical facts. From the preceding passages our readers will be prepared for the plan of treatment recommended by Dr. Allnatt.

"Keeping in view the principles I have endeavoured to inculcate in the preceding pages, the indications to be attended to in the treatment of tic douloureux are, to relieve the irritation of the abdominal viscera, and, in cases of long standing, the consequent hyperæmia which may have been induced. For this purpose, I have found the free use of aperients of unfailing efficacy, and I give a decided preference, over all others, to a pill combining a small quantity of croton oil with stomachic aperients.

In plethoric habits, and when the constitution has not materially suffered by protracted agony, the aperient plan should be steadily persevered in and carried to its full extent; that is, the patient may be kept under the influence of purgatives until the pain has subsided.

The diet, which of course must be carefully regulated, should consist of light and nutritious food; all indigestible aliment should be avoided; and irritating spirituous and fermented liquids absolutely prohibited.

Exercise in the open air is particularly desirable, as it tends to the 'equalization of the circulation:' not, however, that exercise which consists in the 'luxurious rolling of a carriage, but brisk walking on foot until a glow is excited, or, what is still more desirable, horse exercise.

By these means, and these alone, I have succeeded in curing inveterate cases of tic douloureux in the course of six or eight days, which had withstood for months and years every other method of treatment.

But suppose a weak and delicate female with anæmia, to be the subject of tic douloureux, in whom the periodical functions of the uterus are irregularly performed, or in whom the disorder is complicated with hysteria or other affections connected with an irritable and mobile state of the system—in this case, purgatives must be resorted to with great caution and in very small and divided doses; still they must be used, and alternated, as occasion may require, with ammonia,

steel, the vegetable bitters, sedatives, &c. It is in these instances that quina and the sesqui-oxyd of iron produce such marked and decided relief."

The second part or section of the work is occupied with "Other Affections of the Ganglionic System," as hepatalgia—palpitation—sympathetic headache—neuralgia spinalis—hysteria—spasmodic cough—amaurosis—epilepsy, &c. followed by a considerable list of cases, to which we must refer our readers for much research, ingenious reasoning, and practical information.

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### MEDICAL REFORM.

#### SIR JAMES CLARK'S LETTER TO SIR J. GRAHAM ON MEDICAL REFORM.

We received this Letter at the eleventh, or rather, at the twelfth hour, and had only time to glance hastily over it. It is sensibly and temperately written, though some portions of it are a little obscure. We think the following heads will contain the leading principles and features of the proposed plan of reform.

1. A college, faculty, or ruling body to be formed in each of the three divisions of the empire for examining candidates and granting degrees.
2. The profession to be divided into two grades or classes—**BACHELORS** of Medicine and Surgery, and **DOCTORS** of Medicine and Surgery.
3. The education and examination for the **BACHELORS** to be uniform.
4. Both ranks to pass through the examination for **BACHELOR**, whether they mean to attain the higher grade or not. Thus, as medicine and surgery are always more or less combined, so the **GENERAL PRACTITIONER** must pass this ordeal as well as those who are intended for the doctorate.
5. All Bachelors, and of course all General Practitioners, to be eligible for the higher grade, or Doctorate, whenever they submit to the examinations, &c. allotted for that grade.
6. Sir James thinks that a union of the existing Colleges of Physicians and Surgeons, in London, Edinburgh, and Dublin, might constitute the ruling body for the respective capitals.
7. A supreme senate, in connexion with Government, to superintend the concerns of the Colleges and the profession generally. He thinks the present "**UNIVERSITY OF LONDON**," with extension and modification, might be easily converted into the supreme senate.
8. The Bachelors, and consequently the body of general practitioners, to have a voice in the election of the councils of the respective Colleges.
9. A court of honour to be vested in the Colleges or Senate, to punish, by striking off the list, such members as disgrace themselves or the profession by misconduct.
10. Sir James thinks it desirable that the *practice* of pharmacy should be divorced from the practice of physic and surgery.

The above are the chief characteristics of the plan proposed, and we need hardly say that they approximate closely to those which we have long advocated in this Journal.

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**PLAN OF MEDICAL REFORM, &c. &c.** By *Rich. Carmichael*, Esq. M.R.I.A.  
In a Letter to Sir Robert Peel, Bart. Pp. 55. Longman & Co. 1841.

This plan may be comprised in a few lines—the reasons for such plan, and extracts from the report of the parliamentary committee, occupying the 55 pages of the pamphlet.

"I shall not, however, here enlarge upon the reasons that render the improvement and re-organization of the medical profession indispensably necessary. They will be sufficiently obvious by laying before you what the majority of medical reformers require :—

1st—A good preliminary education, such as is required of those who enter into the other learned professions.

2ndly—A good *practical* professional education, to be tested by a scrutinizing *demonstrative* examination.

3rdly—Equality of qualification in each great division of the United Kingdom.

4thly—The union of physic and surgery, at least in education.

5thly—The separation of the practice of pharmacy from the practice of medicine, as far as the interests and usages of society may permit."

Mr. Carmichael states, and truly, that, while almost every person of intellect and candour admits the necessity of medical reform, yet "scarcely even two of the members of the medical profession itself are agreed as to the nature and extent of it." Now if this be the case, and we fear that it is, what hope have we that the head of the government, Sir R. PEEL, and that of the Home Department, Sir James Graham, can disentangle the subject of its infinite perplexities, or reconcile such jarring opinions, when they are badgered on all sides by matters of the highest political interest, affecting the welfare of the state, and the tenure of their own office! Mr. C. may depend upon it that Sir Robert and Sir James Graham will be ear-wigged day and night by interested personages. Reform will be left to partizans, and the consequence will be, we fear, *PARTY-LEGISLATION*!! Agreeing, as we do, with Mr. Carmichael on all the leading principles of medical reform which he advocates, we see much more difficulty in the execution of those measures than he appears to do. We are quite confident that unless a *high and uniform* standard of education, preliminary and medico-chirurgical, be adopted, the profession will continue to swarm, as it now does, with a multitude of unequally educated aspirants, whose hunger and necessities will compel them to worry and wrangle for a morsel of bread, or a new patient.\*

We may here glance at some of the details of the plan sketched out by Mr. Carmichael.

1. The preliminary examination in classics and science should be equal to that which graduates or undergraduates pass through at the Universities.

2. A good *practical* professional education, to be tested by a searching *demonstrative* examination. The number of years passed in hospitals, dissecting-rooms, and lecture-rooms to be not less than five—better to be six or seven. "No portion of this period to be spent in an apothecary's or chemist's shop."

3. The education and tests of examination are to be conducted on the same scale, and in the same manner, in the three kingdoms, so that there may be an equality of qualification throughout Great Britain and Ireland. Upon the question of having two, or only one grade in the profession, Mr. C. observes :—

"This is a question upon which the profession are much divided; some contending that if there is but one grade of practitioners, who must, of course, be required to have a liberal and extensive education, both preliminary and professional, there will not be a sufficient supply of medical men to meet the wants of the nation; others, on the contrary, aver that under the one grade there will be an abundant supply to meet every demand. At present all parts of this vast empire are inundated by hordes of struggling and starving medical men, who have little other occupation than expressing to one another their unavailing regrets that they have spent their time, money, and labour in acquiring the knowledge of a profession which is now of no use to them. The only legitimate

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\* See the disgraceful contest of this kind, as stated in the Medical Gazette for January 7, 1842. Page 605.

way of guarding for the future against this evil is, to raise the qualification, which, by requiring more time, labour, and money than is at present demanded, will tend in a few years to lessen the supply of medical men, and yet render it commensurate with the *real* wants of the people."

"If you admit of two licensed grades of the profession—the one to supply advice to the affluent, the other to afford both advice and medicine to their less fortunate fellow-subjects—you will perpetuate the evil system which now exists, and you will continue to have the nation overrun as hitherto by ignorant or half-educated medical men."

But *even* if all are *permitted and authorized* to charge for their visits, and not to supply medicines, there will be a large number of young and needy practitioners, who will immediately advertise that they will supply medicines and give advice, merely charging for the *former* and giving the latter gratuitously. We apprehend that no law can ever pass *prohibitory* of dispensing medicines by a regularly educated medical man under the new regime—and there will be plenty to take advantage of the non-prohibition. We have long been convinced that nothing but an agreement and consent among the practitioners of each locality, can ever mitigate this evil. We say *mitigation*; for there will be some who will hold out against, or break through the best regulations.

3. Mr. Carmichael advocates, what this Journal has always advocated—the union of physic and surgery, in *EDUCATION*—leaving it to the choice of the individual to practise which branch of the profession he pleases afterwards.

"In large cities and communities, some will naturally incline to the practice of physic, while others will prefer that of surgery, and thus individual eminence will naturally be acquired in either one or other of those divisions. But in smaller towns and communities, both branches must be practised by the same persons; and for this indispensable necessity they will, under the proposed reform, be amply qualified."

4. The last question is—"the separation of the practice of pharmacy from that of medicine—as far as the interests and usage of society may permit." Mr. C. considers this the most difficult question of all, and without this reform, "all others would be a mere bagatelle."

"No one can doubt that the same individual who is busied all day in visiting and prescribing for patients cannot superintend as he ought the preparation and compounding of medicine: hence the numerous fatal mistakes, not one in a hundred of which ever meets the public eye, notwithstanding the numerous instances so constantly detailed in the diurnal press. No one can doubt that, if an apothecary or general practitioner is not paid for his visits or attendance, he must prescribe medicine in such mode, and in such quantities, as will enable him to live."

It unfortunately happens that nine-tenths of those who are loudest in their clamours for medical reform, are inimical to this separation of physic from pharmacy, without which separation Mr. C. considers everything else as bagatelles. Still he thinks that although the unhappy junction of physic and pharmacy cannot be abolished by law in this country, where it has taken such deep root, yet that it may be modified, "so as to preserve all its utility to the public, and, at the same time, deprive it of its mischievous tendencies." This happy medium—this "*juste milieu*," is comprised in the following sentence.

"This may be done simply by a legislative enactment that all general practitioners *shall be entitled to charge for attendance, but not for medicine*; and it may also be provided, that any general practitioner who shall be convicted of sending out medicine from his shop or laboratory that has not been compounded either by himself or by some *licensed* apothecary, shall be liable to the punishment of fine or imprisonment."

We thought Mr. Carmichael knew human nature better, and the discontent of sick folks better than is evinced in the foregoing passage. If general practi-

tioners charged only for their *attendance*, and threw in their medicine *gratis*, the patient would instantly conclude (for the ingratitude and suspicions of this class are boundless) that the doctor would be extremely liberal of his *visits*, but wonderfully chary of sending a particle of *medicine* that was fit for a dog to swallow! We have been longer conversant with the sick-room than Mr. Carmichael, and we know that this is the very sentiment that would pervade half the community of invalids. No. It is better to separate the two branches entirely, or to charge for "medicine and attendance," from 3s. 6d. to 7 shillings per diem, according to the severity of the case, or the distance traversed.

It is obvious that the reform proposed by Mr. Carmichael would at once do away with the whole system of apprenticeship; and here again a great majority of the present race of general practitioners will strenuously oppose the plan. In short, whichever way we turn, we see nothing but difficulties—nothing but clashing interests—nothing but contrariety of sentiment on almost every point of medical reform! We have seen the fate of the general Reform Bill, which is now almost as much abhorred by the Whigs and Radicals, as by the Tories and Conservatives! We confess that we anticipate little but abortive measures in the regeneration of our own profession—BY LAW. If reform began at home, and men treated their brethren like brother-practitioners, with liberality and kindness, medicine would rise to a far more dignified station than it has as yet attained. Parliamentary enactments will do little good till after the moral reform has been effected.

The formation of a SENATE, however, which may control the Colleges, and regulate the profession generally, is calculated, we think, to effect much good. This is the only effective measure which we expect from Sir J. Graham's new Bill.

A PRACTICAL TREATISE ON THE CURE OF DISEASES BY WATER. By James Wilson, M.D., Physician to Prince Nassau, &c. Churchill, 1842.

Pindar little expected that his dogma—"ariston men udor"—would be the creed of the nineteenth century! The water companies are in a panic—not from any fear of losing their customers—but from the dread of a *run* upon their reservoirs by the tea-totallers on one side, and the hydropaths on the other! Meetings, we understand, have been held among the water companies to consider the means of warding off, or rather of meeting the impending storm. One of the projects, recommended by the THAMES Company, is to leave off filtering or deparating the water, and to supply it just as it is pumped up from the river at high tide, when the stream has completely washed out the common-sewers, and carried their contents up to the pump-engine at Chelsea. They think, and with some reason, that if this plan does not sicken the disciples of Priessnitz, nothing else will!—The New-river and other companies think of infusing as much ipecacuanha or tartrate of antimony into their sources as will nauseate the hydropaths, without sickening their temperate customers.

Meantime we think we can allay the apprehensions of the water companies—and also of the Apothecaries' Company, by assuring them that the wet sheets of Graefenberg will never become popular in England—nor will the ingurgitation of Thames water long supersede that of "Truman, Hanbury, and Co." In fact, we have little doubt but that Priessnitz himself, after draining a pot of the real "heavy wet," would abandon his "kalt wasser" and wet sheets for ever.

It will be quite unnecessary for us to go into argument with Dr. Wilson. The following specimen of the reasoning, or rather declamation, which fills nine-tenths of the volume, will give the reader some idea of its contents.

"How often have I observed the undertaker's house placed between a gin

palace and a druggist's shop, and heard at the same time the curse and drunken hiccup,—the undertaker's hammer,—and the pestle and mortar of the druggist,—blending into strange unison, and producing a combined sound, which, when modulated and softened down by distance, came on the ear like an unearthly wail of 'Wo! wo!'

In answer to the remark that has been made that there is nothing *new* in Priessnitz's cold water cure, Dr. W. replies, "is there nothing *new* in curing inflammation of the lungs or apoplexy with cold water?" We say there is certainly something new in such a cure—but then M. Priessnitz must first prove to us that there is also something *true* in the averment.

Why did not Dr. Wilson ask us the following question? "Is it nothing *new* when M. Priessnitz cures Etna and Vesuvius of fire-spitting, by pouring down their throats the Mediterranean Sea?" We answer that there is just as much of the *new* and the *true* in this cure as in the other. It is acknowledged, even by Mr. Claridge, that Priessnitz is so ignorant as not to know in which side of the body the liver is located. If so, how could such a man diagnose pneumonia or pleuritis from neuralgia or rheumatism of the intercostal muscles? We have known men, *melioris notæ*, make such mistakes, but as for the Silesian peasant, it is absurd to suppose that he could tell carditis from colic.

The cases of acute inflammation said to be cured by Priessnitz, are, in all probability, deceptions—we do not say wilful ones. In some constitutions, such is the power of the *vis vitæ*, that nature will cure diseases, not only without proper remedies, but in despite of improper ones. If acute diseases ever get well in wet sheets at Graefenberg, it is owing to the strength of the constitution, and not to the virtue of cold water, either inwardly or outwardly applied.

Dr. Wilson avers, that he *has seen* pneumonia, "where nearly the whole substance of the lungs was inflamed, as shown by the stethoscope, cured in 38 hours." Now we ask him, did this patient climb the mountains and repair to Graefenberg, with nearly the whole of the lungs in a state of acute inflammation? If the pneumonia was contracted during the water-cure at Graefenberg, what says Dr. Wilson to the remedy which could cure the inflammation, but not prevent it? But the climax of absurdity is not yet reached. Dr. W. asserts that he has seen APOPLEXY cured in a few hours by Priessnitz!!! Now did the patient climb up to Graefenberg in a state of apoplexy? Or did he become apoplectic while there, under cure for some other complaint?

We need go no farther. Dr. Wilson has no doubt that "establishments for the treatment of diseases by water will be formed in *every part* of England in a very short time." Gently good Doctor! Remember the fate of St. John Long. There is such a personage, in each county, as a coroner; and, as *water-curing* in England will be little else than *water-killing*, we advise the hydropaths to have the fear of God and of Mr. Wakley before their eyes!

#### THE ANATOMY OF THE URINARY BLADDER AND PERINÆUM OF THE MALE.

Illustrated by Engravings. With Physiological, Pathological, and Surgical Observations. By *Alexander Monro, M.D. F.R.S.E., &c.* 8vo. pp. 90. Edinburgh: Maclachlan and Co. 1842.

DR. MONRO's work is likely to prove very useful to students, whether of younger or of later growth. In it we see displayed the mixture of anatomical description with practical remarks, which is always so instructive.

For example, the ischio-rectal fossa is described, with its walls composed of the ischio-rectal layer of fascia covering the levator ani on the inner side, and the fascia investing the lateral surface of the obturator muscle on the outer side.



These layers of fascia run into one another above. On this, Dr. *Monro* observes, that the junction of these two layers superiorly seems to account for the internal orifices of fistulæ being situated generally at such a short distance above the anus, because, owing to the resistance offered by these fasciæ superiorly, matter is prevented from burrowing in that direction, and the abscess opens either into the lower part of the rectum, or at a short distance from the anus, or near the tuber-ischiæ.

He gives a very good account of the superficial perineal fascia, and concludes :—In reviewing the description of the superficial fascia, it is of the highest importance to bear in mind its various attachments, and to reflect, how these operate in cases where urine has been infiltrated, either from rupture or ulceration of the membranous part of the urethra. In such cases, the effused fluid, instead of passing down the thighs or towards the ischio-rectal region, never passes lower than on a level with the apices of the tuberosities of the ischia, and then proceeds upwards to the lower part of the abdomen, infiltrating the scrotum and penis. Now on looking over the description of the fascia, the causes are at once obvious ; the superficial fascia is dense and resisting, its attachments laterally to the rami of the pubis and ischia effectually prevent fluid passing in that direction towards the thighs, whilst its reflection posteriorly and its union there with the deep fascia prevent it passing towards the anal region ; but its continuity anteriorly with the loose cellular fascia of the scrotum, readily allows the passage of fluid in that direction ; and this shows the absolute necessity of having recourse to early and free incisions through this fascia in cases of infiltration of urine, as affording the only chance of success, by giving free vent to the confined acrid fluid, and the sloughing cellular tissue.

Speaking of the *Bladder*, Dr. *Monro* observes :—By disease, the form of the bladder is materially altered ; thus, from the irritation of a stone, it is sometimes contracted, and its coats are at the same time thickened, that it cannot be made to rise above the ossa pubis, so that the patient has very frequent calls to pass urine ; or, it is contracted upon a stone, in the middle, like a sand-glass, or divided, in its under part, into two lateral portions. Hence, before attempting the operation of lithotomy, it is of the greatest moment to ascertain whether the bladder will rise above the ossa pubis. Thus we learn whether the coats of the bladder be in their sound and distensible state, or not.

He seems to be of opinion that division of the *pelvic fascia* is not so fatal, in the operation of lithotomy, as has been supposed. "Considering," he says, "that stones weighing 13 or 14 ounces have been extracted, and with no other bad consequences than incontinence of urine, as in a case operated upon by Mr. *Alexander Wood*, and in another instance recorded by *Klein*, who extracted a stone which weighed 12 ounces and 30 grains, and whose patient recovered,—and in other cases recorded ;\* it seems to me probable, that the division of the pelvic fascia does not invariably prove fatal. This supposition seems the more probable, from the following statement by Mr. *Martineau* of *Norwich*, one of the most successful lithotomists, who has observed, 'Should the stone be large, or there be any difficulty in the extraction, rather than use much force, while the forceps have a firm hold of the stone, I give the handles to an assistant, who is to draw them upwards and outwards, while the part forming the stricture is cut. I have often repeated this enlargement.'

It is right to observe, however, that this statement of Mr. *Martineau's* has given rise to some astonishment on the part of those who saw him operate.

*Sounding for Stone*.—If at last, says Dr. *Monro*, after describing the process, we rub upon some hard substance, we are not at once to take it for certain.

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\* Vide Med. Chir. Trans. of London, vol. xi. p. 54.

that there is a stone in the bladder, on account of which lithotomy is necessary ; for a constriction and induration of the neck of the bladder has sometimes deceived surgeons : and they may still more readily, and in fact have often been deceived by small particles of sand or gravel sticking about the neck of the bladder, or within the urethra, or lodged in small cysts in the sides of the urethra, or in the prostate gland.

"Before dismissing this subject of sounding for the stone, I will venture to allege, that surgeons have, very generally, committed a mistake, which has been the occasion of much controversy among them, in supposing, that in sounding, or in introducing a catheter, success depends much on the posture of the patient, instead of which, as the bowels within the pelvis, through which the sound passes, are all fixed in their places, their relative situations must be the same in all postures, and, in fact, we may observe that different surgeons not only attempt to sound their patients in the different postures of standing, sitting, or lying, but succeed equally well in all of them. Changing the posture of the patient can serve only to change the posture of the stone."

But surely this is just the thing to be desired. The stone is apt to fall down behind the orifice of the urethra, and here it is difficult to reach it. By raising the pelvis, and injecting water into the bladder, the stone is brought to gravitate to the posterior part of the *bas-fond* of the bladder where the sound can get at it.

*Hæmorrhage from Lithotomy.*—Dr. Monro quotes from some very valuable remarks by Mr. Spence, assistant demonstrator in the University, who writes from the examination of seventy-three subjects.

*The Internal Pudic Artery.*—After enumerating several cases in which the pudic artery had been wounded by celebrated lithotomists, Mr. Spence continues. "It is, however, worthy of remark, that in all the cases mentioned, with the exception of that by Mr. Cross, who does not give the particulars of the operation, the instrument used to divide the prostate were either the cutting gorget, BLIZARD's beaked knife, or the lithotome caché ; the method of using which, and the danger arising from it, I have already explained. And after mature consideration of the surgical relations of the vessel, and of the cases in which it has actually been wounded, I cannot help thinking that, if the operation be performed with the knife, the staff held steady by an assistant from first to last, and the prostate divided obliquely downward and outwards, a wound of the pudic artery will be a rare occurrence indeed."

*Irregularity of the Pudic Artery.*—In one subject Mr. Spence found a large vessel arising from the internal iliac in common with the obturator ; it then passed along the side of the bladder, and over the upper surface of the prostate ; on arriving near the pudic arch, it pierced the fascia immediately external to the left anterior true ligament of the bladder, and divided into three branches ; one entered the spongy part of the urethra, about an inch anterior to the bulb ; the other two branches were distributed, one to the dorsum, the other to the crus penis. If such an anomaly as that described in either of the two first-mentioned cases existed on the left side of a person who was to undergo the lateral operation, the artery must inevitably be wounded either in opening the urethra or on dividing the prostate. But, in this particular instance, the vessel would have been in no danger, for it lay completely above the line of incision, and on the upper surface of the prostate.

*Irregularity of the Artery of the Bulb.*—"In a subject which I dissected in 1837, the artery of the bulb arose from the pudic as usual, but then passed almost directly backwards to near the anus, whence it again curved upwards to

gain the bulb. I have also seen two cases similar to that described by Mr. STANLEY, in which the vessel came off from the pudic posterior to its usual origin, ran immediately above the inferior margin of the triangular ligament, and then passed upwards to the bulb. It is evident that in such cases, and also where the vessel comes off from the irregular pudic trunk and runs along the membranous part of the urethra, as in the case mentioned by Dr. MONRO, of which I have already spoken, this artery must be divided in the lateral operation; and the existence of these anomalies sufficiently disproves Mr. LISTON's sweeping assertion, that the artery of the bulb runs no risk, whatever be its course, if the incisions be made low in the perinæum.

*The Prostatic Artery* arises sometimes as a distinct branch from the internal iliac, but more generally in common with the vesical, or from the internal pudic, in the first part of its course, before it leaves the pelvis. In the great majority of cases the vessel passes along the lateral and inferior surface of the bladder towards its neck, then pierces the ilco-vesical fascia and gains the side of the prostate, on which it divides into numerous twigs, which supply that gland and the neighbouring surface of the rectum. In such a distribution of the artery, it is not likely to furnish much blood if divided; but in several instances Mr. Spence has seen the prostatic artery gain the perineal surface of the prostate without dividing into minute branches; and in eight of these cases the vessel was fully as large as the artery of the bulb, and would have bled profusely if divided, as it must inevitably have been in the lateral operation of lithotomy.

*Interior Hæmorrhoidal Artery.*—"This vessel leaves the pudic opposite the tuber ischii, and is of a considerable size at its origin; but shortly after piercing the fascia which binds down the pudic, it divides into several branches, which pass across the ischio-rectal space, and again sub-divide as they approach the levator ani; some pass into and through that muscle to the lower part of the bowel—others are distributed about the anus. In a few cases, I have seen the vessel pass almost across the ischio-rectal space without dividing into branches; and as it must always be cut in lithotomy, I should think that, in such a case, it would bleed profusely, both on account of its own size, and its proximity to the pudic trunk. I believe, however, that in most cases the artery could be readily enough secured, unless it be cut so close to its origin as to retract within the fascia, or its coats so diseased as not to hold a ligature, a state in which I have frequently found the hæmorrhoidals in old people; and Mr. LISTON mentions a remarkable case of fatal hæmorrhage from this state of the diseased arteries."

*The Prostatic Veins.*—When we consider that these communicate freely with the superior prostatic plexus, and inferiorly with the middle hæmorrhoidal veins, and remember the want of valves in these vessels, and their dilated form in old persons, it must be allowed, that, in them, at least, this plexus constitutes a formidable source of hæmorrhage after lithotomy. And of late years it has been noticed as such by Baron DUPUYTREN, Dr. MONRO, MM. VELPEAU and ROBERT, the last of whom has recorded two cases of hæmorrhage from this source.

Mr. Spence winds up by saying,—"I would, however, observe before concluding, that the vessels which I consider the most likely to give rise to such an accident, are the artery of the bulb and the artery of the prostate when large. For I have found, during my investigations, three cases of irregularity in the artery of the bulb, and eight of the enlarged prostatic artery; so that, in eleven cases out of the seventy-three subjects dissected by me, these vessels must inevitably have been wounded, owing to their position. I also think that these facts are sufficient to prove that hæmorrhage may sometimes occur, without any fault on the part of the operator."

## Spirit of the Foreign Periodicals, &c.

### M. DUMAS'S LECTURES ON ORGANIC CHEMISTRY.

WE learn from the pages of the French Medical Gazette, that this celebrated teacher has recently published the farewell Lecture, at the close of his course on Organic Chemistry, which he delivered last year at the Faculty of Medicine. From the high reputation of the author, and the increasing attention which is now paid to this most interesting branch of analytic science, it is sure to attract very general attention. One section of it is devoted to the investigation of what he calls the "chemical statistics of organized beings," wherein he endeavours to determine—first, the means of the nutrition and growth of animals and vegetables; and, secondly, the laws which maintain and perpetuate on the surface of the globe the relative existence of animals and plants.

In another section, the author discusses very elaborately the difficult questions of respiration, animal heat, and digestion, exposing, as he goes along, the fallacy of former theories, and propounding several novel views of his own.

All that we propose to do, is to select a few of the most interesting passages from the Lectures, and the comments of the French reviewer upon them.

#### *Source of the Component Materials of Vegetable and Animal Substances.*

"Whence is the matter of which plants and animals are composed; and whither does it go when death breaks the chains which bind their different parts together;"—these are the questions which M. *Dumas* propounds at the threshold of his inquiries, and which no doubt must often have suggested themselves to every reflecting mind.

Considered in the generality of living beings, the matter, which is incessantly organised and destroyed, will be found to proceed from, and to return to, the atmosphere surrounding us. It is this element which constitutes the bond of union between the two classes of living existence;—which is the grand laboratory whence plants and animals draw the elements of their mutual reparation; and which is also the immense reservoir that receives the products of the destruction of beings destined themselves to supply the materials required for the development of new existences.

Living plants are found to decompose the carbonic acid of the air for the purpose of assimilating its carbon to themselves; they decompose the water in the atmosphere or the earth, appropriating the hydrogen and liberating the oxygen: and from the atmosphere they derive the greater portion of the nitrogen or azote which enters into their composition.

On the other hand, animals are observed to be continually pouring forth a watery vapour into the surrounding air, in consequence of the re-action of its oxygen with the hydrogen of their bodies. The carbon combining with the oxygen generates carbonic acid; and nitrogen is exhaled, either directly in the gaseous state during expiration, or indirectly, in the form of ammonia, by the urinary excretion.

In this manner there is a constant reciprocal and compensating interchange of elements between the two classes of living beings; plants withdrawing from the air what animals communicate to it. In this chemical point of view, if the *former* constitute an apparatus, on a great scale, of reduction for appropriating the hydrogen of water, the carbon of carbonic acid and the azote of ammonia, the *latter*, in their turn, constitute an apparatus of combustion, in which carbon

and hydrogen are continually burned, and from which azote is continually exhaled.

The atmospheric air may therefore be regarded as the important bond of union which holds together the two great classes of organised existences. Matter descends from it into the bodies of plants; it penetrates subsequently into those of animals; and ultimately returns to its primitive source, when the latter have fulfilled the purposes for which they were called into life.

The water and carbon, which are incorporated with the framework of plants, are not long of producing, under the wonderful but mysterious operation of solar light, all the organic compounds which constitute the different vegetable tissues. We only need study the composition of the constituents furnished by their analysis to be convinced that the various substances of gum, sugar, starch, &c. may be formed by the immediate combination of these elements; viz. water and charcoal, water, charcoal and azote or ammonia.

It is thus in the vegetable world, according to the opinion of M. Dumas, that the complex products of organisation are first prepared, and that the great primary laboratory of life is seated. From vegetables the materials pass into the bodies of herbivorous animals, and in these they become assimilated, and prepared to become the food of other tribes of animals. The fibrine, albumen, and caseum--which are generally regarded as the essential products of animal elaboration--exist already formed in plants; for in their constitution and in their properties, these components are strikingly analogous with the lignine, starch, and dextrine of vegetable substances . . . . .

#### *Generation and Influence of Ammonia.*

Ammonia is the principal product of the urinary secretion. The azote, which is necessary for the development of vegetable substances, is in this form supplied either to the atmosphere or to the ground. But the organs, which constitute the reservoir and the excretory canal of the urine, would be inevitably injured by the direct contact of ammonia or even of its carbonate. Hence it is that it is not ammonia or its carbonate that is discharged in the urine, but another compound of hydrogen and nitrogen--viz. urea. Now, what is the chemical composition of this substance? It is found to be nothing else but carbonate of ammonia, deprived of two molecules of water. Thus modified, the carbonate is altogether inactive when applied to a living animal membrane; and then it can pass along the urinary apparatus without giving rise to any irritation. But when exposed to the air, it quickly undergoes a genuine fermentation, which restores to it its two molecules of water: and then the carbonate of ammonia, the formation of which is the final object of the urinary secretion, is found to be distinctly developed.

This salt, the carbonate of ammonia, is found elsewhere in certain physical conditions, which seem to indicate a remarkable foresight, so to speak, in the designs of nature. Although very soluble in water, it presents the singular and altogether exceptional property of completely abandoning its aqueous solutions, whenever they are freely exposed to the air. Being thus soluble and volatile at the same time, the salt is alternately exhaled into the atmosphere, and re-dissolved by the rain. In this way it can travel about from place to place, from the air to the earth, and back again from the earth to the air, until, after being elaborated in the interior of living plants, it is again converted into organic matter. If, instead of being volatile, it had been of a fixed nature, the salt would inevitably have been that it would have remained attached to those parts of the soil, where it had been developed, and the general mass of vegetables could not have entered into those ready relations with it, which now exist throughout the world.

*Action of Plants on Carbonic Acid, &c.*

It is generally said that plants evolve carbonic acid during the night. *M. Dumas* is of a different opinion; he thinks that they only draw by their roots the carbonic acid contained in the soil, and that this gas incessantly traverses their tissues, to be finally exhaled into the atmosphere. During the day, the solar light induces the fixation of the carbon; but if the plant grows in the shade or during the night, no foreign force intervening, the carbonic acid escapes without any change.

At certain periods, a plant, or at least certain organs of it, acts the part of an animal, and becomes, like it, an apparatus of combustion for carbon and hydrogen, heat being evolved during the process. Let an embryo be developed, a flower be impregnated, or a grain begin to germ, and immediately a certain amount of caloric is generated, and carbonic acid and water are produced—in other words, vegetable substances exhibit all the characters of animal life.

An interesting subject for inquiry is to examine what is the part that the hydrogenous substances, which abound in so many plants, perform. Volatile oils seem to act as a defence against the attacks of insects; while the thick fixed oils, and the fatty matter which surrounds the grain, by undergoing a slow combustion during the process of germination, serve to produce the heat necessary for the development of the young plant. Again, the waxy matter, which varnishes the surface of many leaves and fruits, renders them impermeable alike to the exudation and imbibition of moisture. While we thus admit the importance of such hydrogenated compounds to vegetable life, it is not to be forgotten that they are neither so abundant nor so necessary as the numerous neutral products formed by the union of carbon and water. . . . .

*Fermentative Processes in Living Bodies.*

*M. Dumas* has been led by the results of his numerous researches to give a remarkable extension to the influence of the process, so well known under the name of fermentation, and of which the conversion of saccharine matter into carbonic acid presents one of the best known examples, in the production of the phenomena of organic chemistry. A multitude of decompositions, to which animal and vegetable substances are subject, and which are apparently very dissimilar from each other, seem to be all owing to this process. As examples, we may cite the transformation of urea into carbonate of ammonia under the influence of the mucous derived from the bladder; that of the fecula of plants into dextrine and sugar; the acetification of alcoholic liquors; the putrid decomposition of organised substances; the viscous fermentation of sugar and the change of this substance into lactic acid; the simultaneous development of the oil of bitter almonds and of cyanhydric acid, that of the essence of black mustard; and, we may even add to the catalogue, the phenomena of nitrification. All these transformations, hitherto inexplicable, may according to this idea be accounted for, if there be only present a matter capable of playing the part that is performed by yeast in alcoholic fermentation. *M. Dumas*, it deserves to be mentioned, regards all ferments as organised beings. . . . .

*Respiration, Animal Heat, and Digestion.*

The explanation, simple and beautiful as it certainly is, proposed by *Lavoisier* of the chemical process, which seems to constitute the phenomena of respiration in animals, has been for a long time known to be irreconcilable with a number of well-established facts. *M. Dumas* has suggested a different view of the question; frankly acknowledging that the idea was originally suggested to his mind by the writings of the German chemist *M. Mitscherlich*. He supposes that the lactate of soda, naturally held in solution by the blood, is converted by the action of the oxygen in the atmosphere into carbonate of soda. This salt, the carbonate, is

then itself decomposed by the free lactic acid coming from the stomach, and the carbonic gas, being thus set at liberty, escapes into the air when the blood arrives at the exposed surface of the lungs. At the same time, the oxygen of the atmosphere, absorbed anew by the vessels during inspiration, continues to re-act upon the reproduced lactate of soda; and thus there is kept up a constant succession of these decompositions.

If this view of the question be correct, the process of sanguification would be very far from being so simple an act as *Lavoisier* and his followers have imagined. To appreciate *M. Dumas'* theory of respiration, it must be considered not isolated and apart from other functions of the body, but rather as constituting a sequence of his chemical doctrine of digestion.

Before explaining this doctrine we shall briefly allude to his opinions on that much disputed subject, the cause and origin of animal heat. We may state *in limine* that, according to his views, this important function is nothing more nor less than the result of a chemical action that takes place in the lungs—the combustion, or, in other words, the combination of carbon and hydrogen with the oxygen of the air. The amount of heat produced, he says, is exactly proportionate to the quantities of these elements consumed. Alluding to the doctrines of *MM. Dulong* and *Desportes*, who imagined that animals have the power of generating heat without any loss of matter expended, he remarks:—"These able physicians have supposed that if an animal be placed and kept for some time in a calorimeter with cold water, its temperature is little, if at all, abated. This however is well known in the present day not to be the case. It is this very cooling of the animal—not taken by these gentlemen into account,—which expresses in their tables the excess of heat that has been attributed by them and by most other physiologists to a peculiar power in the system of the animal, independent of respiration."

#### *M. Dumas' Theory of Digestion.*

In estimating the novel views of our author on this subject, be it remembered that on all occasions he shows a strong desire to reduce under the dominion of the laws, which regulate dead matter, the greater number of the phenomena exhibited by living bodies. The great aim and end therefore of all his researches seem to be to render an exact account of all the varied re-actions which occur in the living economy. Under the influence of this idea—which, we must confess, is far from being satisfactory to our minds—*M. Dumas* strives to explain the various phenomena of digestion by the ordinary laws of chemical action. According to him, the transformation of the alimentary product into a substance, destined to repair the waste of the different organs, is nothing else but a simple function of absorption. The vegetable and animal matters which are used for food contain within themselves, and all ready formed, the immediate principles, which are first deposited in the digestive passages and subsequently pass into the vessels, without undergoing any important change. *M. Dumas* arranges the different articles used for food in three divisions; 1, substances which are capable of assimilation, such as fibrine, albumen, and caseum; 2, substances which are soluble, such as sugar, gum, and fecula; and 3, fatty or oleaginous substances. The *first* are, according to him, absorbed *en nature* by means of a chemical mechanism which has the effect of bringing the assimilable matter into a globular state, so as to permit it to enter and be conveyed along the minute absorbent vessels; the *second* are converted into lactic acid, which is destined—as we alluded to in the preceding page—to supply the essential elements of respiration; and the *last* are usually assimilated in their natural condition, but may be, as occasion requires, taken up by the organs, and consumed by combustion during the process of respiration.

It may be premature to impugn these views of *M. Dumas*, until a work, announced by him, on nutrition, makes its appearance. Still we must caution

our readers against too readily adopting any theory of living action, which is based exclusively on experiments performed on dead matter. The animal body is indeed a laboratory, wherein numerous and most complex decompositions and recompositions are incessantly going on; but then all these processes are modified and controlled by that mysterious, but not the less indubitable, agency which we denominate life.

Much may however be expected from the researches of such men as *M. Dumas, Liebig, &c.* in revealing some, at least, of the steps or acts in these processes; and we may confidently predict that the beautiful science of physiology will henceforth derive by far its most important discoveries from the labours of the enlightened chemist. Away then with the detestable practice of vivisection; and welcome to the peaceful use of the microscope and the test tube.—*Gazette Medicale.*

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#### ANOTHER BLOW TO BROUSSAISM IN FRANCE.

Baron *Michel*, a physician of high standing in the French army, and one of the medical officers of the military hospital of *Gros Caillou* in Paris, has just published a work, entitled "Medical Statistics of this Hospital, followed by Theoretical and Practical Reflexions on Intermittent, Remittent, and Typhoid Fevers."

We select the following extract on the *Treatment of Typhoid Fever*, in illustration of the heading of this article.

"Having found by experience that bleeding and the use of purgatives effected very few cures. I have been led to believe that the phenomena of the disease are mainly attributable to nervous irritation, one effect of which is to suspend or modify all the secretions, and more especially those of the mucous membranes. To relieve this state of things, I have endeavoured to re-establish the functions of the skin—the state of which has such intimate connection with that of the mucous membranes—and at the same time to calm the nervous irritation by the use of appropriate soothing medicines. To effect these ends, my chief remedy has been the acetate of ammonia combined with laudanum.

As soon as a patient exhibits the symptoms which indicate the approach or invasion of typhoid fever, such as general prostration, dryness of the skin, thirst, parched tongue, &c. I administer frequent doses of the medicine in large quantities of mucilaginous water.

From the second or third day, when the disease is really curable, and when it is not associated with organic lesions, the tongue becomes more soft and moist, the skin begins to perspire, and the secretions of the mucous membranes to be re-established. . . . This mode of treatment has the very great advantage of abridging materially the length of the convalescence, and restoring the patient much more rapidly to health, than if he had been treated on other principles. When a patient's strength is much reduced by depletory remedies used for the cure of fever, it often requires three, four, or even six months before he is again fit for military service."

*M. Michel* appends some statistical tables, from which it appears that of 6561 patients admitted into *Gros Caillou* Hospital during 1838, 429 were affected with typhoid fever: of this number 90 died.

On the subject of intermittent fevers, the following extract will show the utter inefficacy, nay rather the pernicious effects, of what has been so absurdly called the physiological method of treatment. It so happens that Baron *Michel's* work has somehow or other, and without his sanction, been accompanied with critical notes by *M. Cassimir Broussais*, who seems to think it only an act of filial duty to maintain the now waning doctrines of his father. In his comments upon the ætiology of agues, he tries to support the idea of this important class of fevers being dependent upon an inflammatory condition of the nervous centres by calling to his



aid the opinions of the military physicians and surgeons who have of late years had such frequent and extensive opportunities of studying them in Algeria. Unhappily for him, however, the experience of these gentlemen is any thing but flattering to his views; for if there is one place more than another, in which the physiological doctrines have met with more decided reverses, even in the hands of their most devoted admirers, it is unquestionably in Africa.

"At Bona and at Algiers," says Baron *Michel*, "during the years 1832 and 1833, the disciples of this school saw nothing in the intermittent and malignant fevers of the countries but acute gastro-enteritis and gastro-cephalitis, and accordingly based their practice upon this view of the question. It was soon discovered that this was an utter fallacy, and that the only method of successful treatment was by administering large doses of quinine, with but little regard to the nature or severity of the symptoms present. So decisive were the effects, that the most ardent Broussaists speedily abandoned their antiphlogistic measures, and with gladness embraced the method which produced such pleasing results."

One of the chief surgeons of the army writes thus on the subject: "How many of us have to be thankful to M. *Maillott* for the method of treating the fevers of Bona which he introduced; for, before that was employed, it must be confessed that the results were in truth most unsatisfactory. The losses have been considerably less since we adopted the practice of exhibiting bark freely. My testimony on this subject cannot be suspected; for, believe me, it required no common evidence to induce me to abandon a doctrine in which I had previously so much confidence."—*Gazette Medicale*.

*Remarks*.—If there is one subject of practice on which French medical men are more at sea—without a compass too—than another, it is unquestionably that of the treatment of fevers. We cannot wonder at this, when we think of the mad enthusiasm with which any favourite doctrine is embraced and inevitably carried *à l'outrance*. *Broussais* has had his day, and a pretty long one it has been. And what has been the result of the dominion which he has exercised over the minds not only of his countrymen, but also of many in other countries? We hesitate not to say, a deplorable loss of human life, and a decided retrocession of medical science. It is only now that the French are beginning to find out that the *gastro-enterite* doctrines are, in a great measure at least, an utter and a most pernicious fallacy. To attribute all the complicated symptoms of fevers to a slight inflammation of the mucous membrane of the stomach or bowels appears to be so irrational that we wonder how any sane man could ever have been misled by it; and yet, year after year, flocks of medical students have issued from the French schools as thoroughly impressed with this notion, as that pain is produced by irritating a nerve, or that a full dose of opium will induce sleep.

This state of things is passing away; and perhaps now the chief evil that we have to guard against is, that the doctrine of local irritation may be too much overlooked, while some other doctrine takes its place, and reigns paramount in its stead. Let it be remembered that there is a certain amount of truth, blended indeed with a vast deal of fallacy, in the tenets of the *Broussaian* creed; and therefore that the total abandonment may be nearly as hurtful as an exclusive and indiscriminate adoption of them.

Judging from the practice of Baron *Michel*—at least as it is given in the *Gazette Medicale*, for we have not seen the original work—there is a tendency among some of the French physicians to substitute a mode of treatment that is altogether empirical for one that is derived solely from theoretical speculation. To recommend the liquor ammoniæ acetatis in conjunction with small doses of opium in all cases of fever indiscriminately, would be little better than an open avowal of downright quackery.

How comes it that no mention is made of emetics—unquestionably among the most important of all remedies in the early stage of all fevers—or of purgatives,

or of leeches, blisters, and so forth? It cannot surely be that these means are utterly powerless in the treatment of many epidemics of typhoid fever, or that they can be replaced by a single formula, and that formula composed of the spiritus mindereri and laudanum. We have so often expressed our opinions on the management of fevers that it is almost unnecessary to add anything more at present. We are friendly to the use of mild diaphoretics—of which by the bye, the employment of the tepid bath, or tepid ablutions is certainly one of the best—but not to the exclusion of other important remedies.—*Rev.*

### ON THE USE AND ABUSE OF CORSETS.

A lively and intelligent correspondent of the *Gazette Medicale* has addressed two or three letters on this most important part of women's dress to Madame ———, and with the usual cleverness of a Frenchman on such matters, tries to gain the end he has in view—that of exposing the injurious effects of tight-lacing—by artfully blending witty satire and graceful flattery with the arguments and reasoning that he employs. It is only the last letter which we have seen: the former ones must somehow or other have escaped our notice. Here are a few specimens.

"Judging from the tone of your reply, Madam, you seem to be convinced yourself of the serious evils of the corset; but while you admit the truth of what I have been saying, you candidly confess that all my preaching will make but few proselytes among the ladies. I know it; but if even a few are gained, it is worth my trouble. In vain may medical men advise, warn, and demonstrate the truth of their precepts; the *beau sexe* will not the less continue to brace in their shoulders and chests, until they often become positively deformed. There is but one way of reaching the difficulty, and convincing the ladies of the absurdity and danger of the practice; and that is to shew that the use of the corset really spoils their shape, and takes away from their attractions. If we could but once make the dear creatures believe that it is the resource only of those who are somewhat deformed, and that the necessity of wearing a corset is a proof in itself of a want of natural grace on the part of the wearer, then indeed might we hope to gain our end. Should *fashion* ever pronounce these few words, *le corset vicillit et enlaidit*—by the bye, these two words are not easily translated by single synonyms—and if it should add, 'do you wish to be always lovely and graceful, ever armed for new conquests? have nothing to do with it;' from that moment its empire is gone, and we shall not have even a relic left of this barbarous and most foolish piece of armour.

The question therefore must be simply, 'does the corset embellish natural grace?'—since all considerations about health and comfort go, as a matter of course, for nothing in the solution of it. Now, where is the *man* that will not allow that it really spoils the shape of a fine woman, and that does not prefer the beauty of Nature's form to all the sublime imaginings of the tailors and sempstresses of Paris?

But you will perhaps say, 'Doctor, are you not too bold to make yourself a judge of the toilette of the ladies?' Madam, I readily admit my utter incompetence; the art is far too difficult and complicated for me to understand it. To attempt to speak upon it would be to get myself laughed at by all the young coquettes, in whose eyes a doctor is only a dark dismal man, the object not unfrequently of mirth and ridicule."

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"There is just as much barbarism in French women drawing in their waists and cribbing up their shoulders, as in the pinching of the feet by the Chinese, or the flattening of the head by some of the Indians. How a spider-waist should

ever be regarded as a sign of beauty, puzzles us poor men mortals to understand. Where is the sculptor or painter that, for his own sake, would represent a woman exactly as she stands before him in all the unnatural restraint of modern dress? Whenever the natural expansion of every part is not permitted, and the natural freedom of movement is confined, there cannot be perfect grace and beauty. Only imagine a *Venus de Medecis* in a corset! the very idea is as absurd to be thought of; and yet there is not a woman in ten thousand but believes that she becomes more graceful and attractive, when once she is well tightened in with her stays."

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"The following table of the various requirements in the composition of a perfect female beauty is taken from an old French work, entitled 'De la Louange et Beauté des Dames.'

Three things should be white . . .	the skin, the hands, the teeth.
black . . .	the eyes, the eyelashes, the eyebrows.
red . . .	the lips, the cheeks, the nails.
long . . .	the body, the hair, the hands.
short . . .	the teeth, the ears, the feet.
wide . . .	the chest, the forehead, the space between the eyebrows.
narrow . . .	the mouth, the figure, the ankle.
plump . . .	the arm, the thigh, the calf of the leg.
slender . . .	the fingers, the lips, the hair.
small . . .	the breasts, the nose, and the head.

Now, Madam, if there be any truth in this table, you see that a slender waist is only a small fractional part in the composition of perfect beauty; and yet it is to this fraction that most women attach so much importance—probably because they fancy that they can supply by art what has been refused by nature. In the *ensemble* of attractions enumerated above, there is not, and there cannot be, any single one that takes the pre-eminence over all the others. It is the life, the animated grace that gives the charm to each and to all of them; and how can that be when the restraint of art is substituted for the freedom of nature. *Ninon* very justly remarked that 'beauty without grace is a hook without a bait.' A woman can be really beautiful only in one way; but she may be pretty and graceful in a thousand different ways. If we are asked, what do you mean by grace as applied to a woman, we should say it consists chiefly in her attitudes and general carriage. This is the secret of that inimitable *desinvolture*, peculiar to some women, and which is to be acquired only by the light and easy movements of the body. It is almost needless to say that perfect freedom can never be exercised, if the body is cabined, cribbed, confined by the stiff stays of the present day. A woman can then neither stoop, nor bend backwards, nor to a side without irksomeness and trouble. The pliancy and flexibility of the back, so essential to graceful movement of the body, become, as is well known, less and less as years advance, till at length in old age they are almost entirely lost. Are we not therefore quite correct in saying that the corset not only *enlaidit* but also *vicillit* the French figure?"

..... "If the most *spirituel* expression of the female character, next to the voice, is to be found in a graceful figure, may we not at once infer that, just in proportion as this expression exhibits the greatest amount of variety and of lights and shades, so will it be more lively and attractive. A witty man once said, 'There are some movements of the petticoat that deserve one of the *Monthyon* prizes:' this is quite true; but how comes it that so few women understand how to avail themselves of the advantages which they have in their own power. The truth is, that they imagine that all the art of attraction consists in holding themselves very erect, and in being well *corsées* and well *busquées*."

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"Without regular exercise in the open air, and perfect freedom of movement, the health—and without health how can there be perfect grace?—cannot possibly be preserved. Beauty, like other flowers, needs exposure to the air and the light of the sun. Now if you wish to have that bloom of spring-tide freshness, that rosy tint which no painter can imitate; if you desire that your walk should have grace and ease in its movements, remember that it is absolutely necessary that the blood should circulate without restraint or impediment, and for this end you must breathe freely, and walk and even run easily; in other words, that you must exercise your body and limbs regularly, actively, and with perfect freedom. The Duke of Saint-Simon very happily said, that the Duchess of Burgundy seemed to walk 'sur la pointe des fleurs.' You may be assured that she was not cased up in a huge heavy corset. Do you suppose that the dancing girls of India, so celebrated for the wonderful vivacity of their movements, wear such a machine? No, no; they have nothing but a light *corsage* provided with an elastic web, which supports without confining the body. You perhaps remember, Madam, that fine line, which *Carlo Maratti* inscribed below a picture of the Graces—*Senza di noi, ogni fatica è vana*. Now it is precisely by that exquisite beauty of form, which antiquity has given to them, that these celebrated figures charm every beholder. But who could recognize them as the eternal models of perfect beauty, if they were enveloped in the dress of modern times? Take even the example of some women who have shown more than ordinary powers of fascination, and it will be found that they did not trust to the mere shape of their waists, but rather to a fine taste in the happy adjustment of their whole *parure*, so as to produce a harmony with their eyes, their figure, their complexion, and the general *ensemble* of their persons. No one understood this art better than the Empress *Josephine*; and it is well known that the corsets, that she wore, were very small and light."

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"Would that women never lost sight of that most true and valuable maxim, that the dress ought never to be more youthful than the age of the party. Coquetry knows how to imitate every thing, even to innocence and modesty; but it requires the most delicate and refined taste to adjust nature and art so to produce an agreeable and harmonious whole. Many women are so alarmed at the idea of becoming lusty, that they will submit to the most severe tightening to prevent the supposed deformity. What a mistake! Most men rather like a woman, if not very young, to have a certain degree of *embonpoint*; and think you that it is youth alone, or the semblance of it, that is the only attraction which the fair have in the eyes of our sex? The experience of every day is against the idea; and every one could tell of examples of women, who had reached the *mezzo cammin di nostra vita*, retaining in the chains of their fascination men who had resisted all the allurements of mere youth and beauty. Hear what that gallant old knight, *Brantome*, says: 'Thus we often see many sorts of Winter fruits of last season equal those of Summer, and be as beautiful to look upon and as savoury to the taste.' Quite true, old Cavalier! It is not the girl alone, just escaped from her teens, and fantastically adorned in all the *graces* (!) of modern fashion that carries captive the eyes of every beholder. But most women have themselves to blame for the preference that is usually shown to young beauties; not content with the charms which Nature has given them, they vainly strive to make up by artifice what they foolishly imagine to have been denied them."

#### NOTICE OF M. VIDAL'S TREATISE ON SURGERY.

From the reviews in the French journals of M. Vidal's large work, entitled  
No. 89.

*Traité de Pathologie Externe et de Médecine Opératoire*, in five volumes, published 1830—41, it appears that his countrymen are disposed to estimate its merits very highly, and to regard it as likely to occupy the place which has hitherto been so long held by Baron Boyer's system of surgery. We have not seen the work ourselves, but from various extracts we should be inclined to think well of it as a scientific and able performance. We shall select a few of these extracts that the English reader may judge for himself.

#### *Rashness of Modern Surgeons.*

"I believe with *John Bell* that we have too decided a taste for bold and hazardous enterprises, and consequently too great a distrust for the autocracy of Nature. It will be found that I lean to what may be called *le naturalisme chirurgical*; but this is far from any bias on my part to a reaction which should propose a disarmament of surgery."

This rebuke ought not to be disregarded by surgeons: there is much truth in it. Many of the crude and hasty performances in operative surgery of late years have been anything but creditable to the profession. Witness the ignorant *ferrets* with which even so many respectable men have, almost indiscriminately, been cutting muscles and tendons across for the cure of squinting, stammering, spinal deformities, &c. &c. We are certainly not quite so bad as our brethren on the continent, who actually permitted, the other day, a charlatan to try his murderous proposal of rapid and forcible extension of long stiffened and even ankylosed joints, by means of a powerful mechanical apparatus! The Academy have at length, we are happy to observe, denounced the practice as altogether inadmissible.

#### *Surgical Diagnosis.*

"Let not the young practitioner ever attach too much importance to any single symptom, however valuable that may be, of a disease; for none is infallible. I would compare the symptoms of a disease to the threads composing a cord—which may represent the diagnosis;—each of the threads by itself is unable to support a weight which is readily borne by the entire cord. If I might carry out this comparison a little further, I would say that each thread is one degree of evidence, and that their union alone can constitute the certainty."

This is well and truly said; the comparison is very just, and happily illustrates the idea. The more experience we have, the more distrustful we become of any one symptom, or even one set of symptoms, taken apart; and, we may add, the less reliance have we in any one remedy or one mode of treatment. What pray is the cause, we might here ask, of the certain degree of re-action against the value of the stethoscope that has been manifesting itself during the last two or three years! Nothing more or less than the exaggerated importance ascribed to it, some time ago, as a means of diagnosis. It is a valuable instrument in the hands of the judicious physician; but its use should never supersede the ordinary means of diagnosis by what have been, absurdly enough, denominated the *rational* symptoms. Auscultation is, to use *M. Vidal's* illustration, one thread—a stout and good one we admit—in the cord; but it is not the cord itself; and if trusted to alone, will often prove fallacious. There are two methods of diagnosis, says our author; the method *à priori*, and the method of exclusion. To us it seems that these two methods are not so distinguishable as *M. Vidal* supposes: in fact, they are generally blended together. Take for example the case of a tumour in the groin; this at once suggests to the mind of the surgeon the idea of a hernia, and perhaps, on further examination, he finds that all the other symptoms confirm the accuracy of this idea. Now such is the diagnosis *à priori*. But this is not enough; the method by exclusion must now have its turn, and we must proceed to ascertain that the tumour is not an aneurism, a varix, a chronic

abscess, &c. Thus the diagnosis by exclusion, or, what may be called, the differential method of diagnosis, serves to complete the diagnosis *à priori*.

#### *Operations en deux Temps.*

M. Vidal, in discussing this very interesting and important subject, criticises with much ability a passage in the last edition of *Sabatier's* work, where it is said that, "when an operation is commenced, the surgeon ought not to allow himself to be stopped by any obstacle." He remarks with great justice that, even in the best considered operations, something unforeseen will not unfrequently occur.

"Operations *en deux temps*," says he, "have this advantage, that nature is not taken by surprise. In the first period, which is the least dangerous, the surgeon explores, so to speak, the ground on which he has to work; if he discovers, by the character which the wound exhibits, that the organism is in an unhealthy condition, the operation is adjourned, until the health is re-established so as to warrant the completion, or the second period, of the operation. The first period, moreover, draws towards the seat of the operation the re-action necessary for its success. Besides this consideration, there is in some cases considerable danger of removing all at once a disease which has existed for a length of time. Observe what occasionally happens after the excision of a large tumour—a general prostration of the vital energies from which the system may not recover. The organism seems as if it had lost its counterpoise; it has no longer that sort of ballast, so to speak, the sudden removal of which will probably make the vessel founder."

We are much pleased with the generous and truly Christian spirit evinced in the following remarks on operations;

"Sometimes," says M. Vidal, "it is a labouring man, the father of a family, who is about to undergo an operation which will disable him afterwards from providing for the wants of himself and his children. This is doubly distressing; and surely it is but the duty of the surgeon to comfort him at the time, and promise to become his future benefactor and friend. How many noble actions might some great surgeons have done, if their souls had been commensurate with their talents and their fortune!"

A truly magnanimous sentiment; let the surgeons of the present day take it at once as a kind rebuke and as a most valuable lesson!

#### *Treatment of Gunshot Wounds.*

M. Vidal strongly recommends the application of leeches around gunshot wounds, and in the neighbourhood of contusions generally. "However," he adds, "it is necessary to bear in mind the distinction which I have pointed out between the two kinds of tumefaction which are apt to occur after such accidents. One is cold, indolent, and passive, and requires the employment not of any sedative or depressing applications, but rather of such as are warm and stimulating. Let it however be kept in mind that the effect of such remedies should always be attentively watched; for, when any symptoms of local reaction come on, we should at once discontinue their use, and resort without delay to those that are decidedly antiphlogistic."

#### *The Diet in Cases of Severe Wounds.*

Our author's opinions on this subject deserve the notice of the English, as well as of the French, surgeon. These are his words: "perhaps in France, we are somewhat too severe in the restriction of nutritious food, and keep our patients too long on a low diet. My own experience confirms the truth of the observation that purulent absorption goes on more readily in persons who are not sufficiently nourished during the healing of their wounds. The state of a wounded patient often resembles very strikingly that of a puerperal woman. After the

expulsion of the placenta, the internal surface of the uterus is in a condition very analogous with that of a large wound ; and we all know that, as a general remark, lying-in women require an ample allowance of nutritious food. The English surgeons, who follow this plan after amputations, obtain perhaps more success than we can boast of in France."

#### *Torsion of Arteries.*

"Of late years some surgeons have endeavoured to substitute, in the treatment of hemorrhage, torsion of the bleeding vessels for the use of the ligature. I have examined this question with much care, and must frankly confess that, in my opinion, the ligature is decidedly the preferable means ; the application of it is simple, easy, not attended with pain, and not generally liable to be followed with unpleasant consequences. In the hospitals of Paris, the occurrence of hemorrhage after a well-applied ligature is very rare indeed. The ligature is, in my opinion, to be preferred whenever we have to do with the lesion of an important artery."

The French reviewer of M. *Vidal's* work very judiciously remarks that the above opinion is rather too absolute and peremptory. Torsion of bleeding vessels will be found to be a very valuable means of arresting hemorrhage in certain cases, where the application of a ligature may be exceedingly difficult or even impracticable. As we might anticipate, it is to arteries of the second and third order that torsion is chiefly applicable ; for example, after excision of the mamma, amputation of the fore-arm, &c. In a recent case of strangulated hernia, in which we assisted M. *Velpeau*, the omentum was found, upon opening the sac, to be united by an old adhesion to its inner surface ; when divided, its vessels bled profusely ; torsion was employed, with the best effects. In such a case as this, the substitution of torsion for the use of a ligature is decidedly a great advantage gained, as no foreign substance is left in contact with the bowels ; and it is unnecessary to say how liable these organs are to inflammation from the presence of any irritating matter. Like every other new remedy, torsion has been over-rated by some and under-rated by other surgeons : it is the *juste milieu*—provided this be based upon rational grounds—that seems to be so difficult, and yet is so important, to hit.

#### *Remarks on Lithotomy.*

We all know how numerous have been the plans recommended at different times for the performance of this formidable operation. Many practised writers have experienced not a little difficulty in even classifying the various proposals that have been made, more especially in reference to the perineal operation, and we believe that there is scarcely one surgeon who, if examined on the question without previous preparation, could arrange his ideas on the subject so clearly as to be able to explain them satisfactorily to others. M. *Vidal* has done much to disentangle this confusion, and our readers will probably be pleased with the following very useful remarks on the classification which he recommends.

"The distinction of lithotomy into the *perineal*, the *hypogastric*, and the *rectal* methods is based on the consideration of the parts that are first divided in the performance of the operation. It is thus upon the *external* incision that most writers have founded the classifications which they have adopted. But this is certainly not the most important period of the operation : of much more consequence is the *internal* incision, that which is made upon some part of the urinary apparatus, the urethra, the prostate, or the bladder. According as the internal incision is limited to the urethra and the prostate, or involves at the same time part of the bladder itself, we have reason to expect a great difference in the results. As the consequences of the operation depend infinitely more on the mode and place of performing the *internal* than the *external* incision, it is surely more logical, and withal much more practical, to divide lithotomy into the *urethral*, the

*prostatic*, and the *vesical* methods, than into those which have usually been spoken of.

This classification will be found to facilitate very much the exposition of the very numerous methods which have been proposed for the performance of the operation in question; and it has this striking advantage over all others; that it directs the attention of the reader mainly to the essential point, viz. : the *internal* incision.

What has been called the *quadrilateral operation* is so truly the personal property, so to speak, of M. Vidal, that we gladly avail ourselves of his own description of this method, which has attracted of late years no inconsiderable attention.

"I proposed this method in my inaugural thesis published in August, 1828 my earliest attempts having been made three years earlier. It is one of the numerous applications of what has been called *debridement multiple*,—a principle in operative surgery of which the advantages are now universally acknowledged. I felt convinced that the disciples of *Lecat*, who divided the prostate only partially but lacerated it freely, and those of *Cheselden*, who adopted the very opposite plan—that of dividing it freely and lacerating it very little—were alike at fault, but certainly in different degrees. The plan of *Lecat* was good, when the surgeon had to do with a small calculus; a small incision was then sufficient, and there was no occasion of enlarging it in any way. According to my view of the subject, the size of the calculus does not require an increase in the *extent*, but only in the *number* of the incisions; for the extent or depth ought to be in all cases nearly the same. Thus for the extraction of small calculi, one limited incision is sufficient (the *unilateral operation*); for those of a middle size, we should employ two incisions (the *bilateral operation*); and when the calculus is large, four small incisions should be made (the *quadrilateral operation*).

In my opinion, the mode of making the external incision is not of much consequence; it matters little whether this be parallel, oblique, perpendicular, straight, or curved; the great object of the surgeon should be that it is not too small. My practice may be briefly explained in these few words:—*one large external incision, and several small internal incisions.*

I prefer, on the whole, the crucial external incision, as it was frequently performed by Dupuytren.

The two first incisions of the prostate are made upon its two oblique inferior radii. When the stone is of a moderate size, these two incisions will be found to be sufficient; but if the calculus be large, the two incisions unite into one, the edges of which will be stretched and lacerated in the efforts made to extract it. Under such circumstances, the surgeon should introduce his left fore-finger, provided with a long probe-pointed bistoury, having its cutting edge directed upwards, outwards, and to the left side (the left superior oblique radius) to the bottom of the wound, and afterwards direct it in the opposite line, viz. outwards, upwards, and to the right side (the right superior oblique radius). If the surgeon wishes not to let go the calculus, he should entrust the forceps to his assistant, and this instrument will guide the bistoury, with which he is then to make the two upward incisions; these, instead of being prolonged towards the skin (as is the case with the two inferior incisions which are confounded with the wound of the perineum), should be limited to the substance of the prostate alone. In this manner the lithotomy becomes *quadrilateral within*, while, externally, it is only *bilateral*; the resistance to the exit of the calculus being greatest at the cervix of the bladder. We thus see that the number of the internal incisions should correspond with the size of the calculus, ever bearing in mind the danger of extending the incisions about the neck of the bladder in any one direction only. Once that a calculus has passed the opening in the prostate, it meets with tissues which readily yield to its passage outwards: thus the two inferior *debridements*, which come to be confounded with the outward crucial incision,



afford ample room for the exit of the calculus from the perineum. It is not at the perineum that the calculus meets with any serious obstacles to its exit ; it is during its passage from the bladder into that portion of it which corresponds with the membranous part of the urethra.

I foresaw that my proposal of the quadrilateral operation would lead to the contrivance of new instruments, and I alluded to this matter in my thesis in these words :—I hope that the profession will not expect from me an instrument with four blades, for the purpose of dividing the four radii of the prostate at the same time. *Chaussier* very aptly remarked, that nothing proves better the poverty of our art, than the richness of its mechanical arsenal. Now this precaution has not prevented a very ingenious surgeon from conferring upon my method a superb four-bladed lithotome—which, however, very fortunately can never be made use of. One word will prove this. The quadrilateral section is required only when the calculus is of large size, and must consequently fill up a large part of the bladder. Conceive, then, to yourselves an instrument which, when introduced into this bladder, should expand into four blades, and the *dévoilement* of which would require four times more space than actually exists ! Moreover, in withdrawing such an instrument, when expanded, an external quadrilateral incision would be made ; and this I wish to avoid. The quadrilateral section, be it remembered, is made to replace the free section of the bladder in a single direction in cases where the stone is of a large size.

My operation was soon appreciated by many practical men ; but as I had not performed it on the living subject at the date of my proposal, its introduction into actual practice was slow.

First *M. Velpeau*, who is always one of the foremost in any surgical movement, and then *M. Guersent*, made the earliest trials of it in Paris ; and *MM. Goyrand, Rolland, and Roux-Martin* of the provinces followed their example soon after. *M. Rolland* published a very able memoir on the subject, in the *Medical and Surgical Journal of Toulouse*, of August, 1837, in which he establishes the excellence of the principle for which I had contended—that of *debridemens multiples* of the prostate for the extraction of large calculi. He has reported several most interesting cases in which he succeeded in extracting large calculi by dividing the prostate in different directions.

#### *Amputation of Gangrened Limbs.*

*M. Vidal*, it will be found, adheres very nearly to the maxim of the older surgeons, not to perform the operation, until the line of demarcation between the dead and the living parts is pretty fairly established.

"A surgical law," says he, "as wise as it is old, lays down the precept that we should not have recourse to the removal of a gangrened part until after the appearance of the circle which separates it from the surrounding tissues. It has been thought by some that we need not adhere to it when the gangrene is of internal origin ; but let the surgeon be on his guard ; the infraction of the law, even under such circumstances, may induce the most disastrous results.

When a limb has been severely contused, how difficult it is to know what will be the limits of the mortification, and of the suppurative inflammation that may ensue. A contusion, which may be supposed to be confined to the foot, often extends up as high as the knee, for the echymosis does not in all cases manifest itself outwardly ; and even the nervous commotion may compromise the life of the entire limb, although there may not be any distinct external symptoms.

We should, therefore, as a general rule, refrain from amputating a limb before the establishment of the inflammatory circle, except when the gangrene is very near to the trunk of the body, and the exhaustion of the system will not permit

us to wait any longer. But, even under such circumstances as these, many a prudent surgeon will not consent to perform the operation, as it is then almost inevitably fatal."

The French reviewer thus comments on the preceding passage. "It will be perceived that M. Vidal is an exceedingly prudent practitioner, and, in a man who has not had the melancholy experience of his own failures to instruct him, this may certainly be regarded as a proof of superior judgment. We have no cause to fear that the study of his work will inspire young surgeons with temerity or presumption: it is in every respect *un livre sage*. Now this is the very quality most needful in works intended for the inexperienced, even although the *sagesse* may be sometimes carried a little too far."

#### *Hospital Gangrene.*

It is gratifying to find from the experience of military surgeons that this frightful disease is, like scurvy, becoming gradually less and less frequent; owing, we may hope, to the improvements which have taken place of late years in public hygiene.

While our author confirms the general accuracy of this statement, he adds,

"I read, however, in the recent work of M. Baudens on Gunshot Wounds, that in the military hospitals at Algeria the disease has sometimes prevailed so extensively, and so fatally, that every patient, who had undergone an important operation, died." Whether this lamentable circumstance is attributable to the unhealthiness of the climate, or to some local disadvantages of the hospitals, does not sufficiently appear. *Delpech* defined hospital gangrene as "a peculiar disorganisation of the soft parts, so that they disappear without leaving any trace of their primitive tissue, and become a putrid homogenous gluten." M. Vidal accepts this definition, but not without criticising it; "This definition," says he, "which has not only all the defects of surgical definitions, but also those which characterise the style of the author, may serve, however, to give an idea of the singular disease of which we are treating."

The blood-vessels, more especially the arteries, resist more than any other tissues the destructive corrosion of the disease. A case is mentioned by our author where a wound in the groin became affected with hospital gangrene; all the soft parts around, to a very considerable depth, were fairly dissected out, but the crural artery was spared. When the gangrene was once stopped, the rapidity, with which the enormous wound was filled up, was truly wonderful. M. Vidal very strongly recommends the application of nitric acid in cases of hospital gangrene, the wounds having been previously washed with a decoction of Provence roses in wine.—*Archives Générales de Médecine*.

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#### M. SEDILLOT ON SURGICAL INSTRUCTION.

M. Sedillot,—after having distinguished himself as an energetic and enterprising military surgeon, first in Poland, during the last revolution in that unfortunate country, and subsequently in Algeria,—has been recently appointed the professor of surgery in the hospital at Strassbourg. The following passages are taken from the introductory lecture to his first course.

#### *Unity of Science.*

"The various divisions of Science exhibit so many points of mutual contact, or rather they are so intimately and necessarily united together, that it is scarcely possible to study any one apart from the rest; all affording reciprocal explanation and enlightenment.

Mechanical and chemical philosophy serves to initiate the mind in the general

laws of nature, and to disclose the operation of the chief external agencies which modify the functions of the living system.

General and descriptive anatomy reveals to the surgeon the unity of the entire organisation; the anatomy of the different regions of the body guides his hand; and pathological anatomy directs his judgment amidst the numerous morbid changes of the various tissues and organs. External pathology reveals the wounds and other lesions of outward parts; internal pathology those of the hidden parts; while the study of materia medica and of operative surgery supplies him with the means of relieving or curing them."

#### *Advantages of early Clinical Study.*

M. Sedillot is a zealous advocate for the student attending on hospital practice from the very commencement of his curriculum.

"I do not dispute," says he, "the advantage of knowing theoretically the facts which we have to observe; for the mind in this way seizes upon all the experience of former times, and there is certainly some truth in the paradox that 'we see well only those things which we know.' I will even admit, and that willingly that the rapidity of a student's progress is generally commensurate with the instruction which he has previously acquired.

But this is not the question; to put it forth in these terms is really to solve it. What we wish to know is whether the student, who does not begin his attendance on clinical practice till the third or fourth year of his studies, is likely to be as adroit at the diagnosis and treatment of diseases as he who has regularly attended to it from his first matriculation. The answer cannot be very doubtful; for the art of observing *ne s'improvise pas*; it needs long and assiduous practice; and if it does require a previous knowledge of general science, your literary and scientific diplomas sufficiently vouch for your competency to observe the leading phenomena of disease as revealed at the bedside of the sick. The majority of our students prefer, however, to follow the programme laid down by the university, and usually pass their first four examinations before commencing their clinical studies. The result of this practice is, that generally the fifth examination is *très faible*.

During three years of service which I spent as an aggregate of the faculty of Paris, I have repeatedly observed that the students, who may have gone through their early examinations with éclat, scarcely knew how to interrogate a patient, and frequently mistook the most obvious symptoms and indications of a well-marked case. The diploma of doctor is, however, awarded to you upon the *ensemble* of your knowledge, and you are left to acquire subsequently from actual practice the experience in which you may be deficient; but in your efforts to obtain this, you are necessarily exposed to the most cruel errors, and often run the risk of compromising your future peace and your success for life.

I readily admit that, in the short space of four years—the period that is judged sufficient for your medical education—the general study of the various branches of science, which compose the curriculum, must take the precedence of that of special facts; for the latter will be the business of your whole after-life. I do not advise you to neglect any of the courses prescribed; but it seems to me that clinical instruction might almost always be blended with their study at the same time. Few students begin their labours early in the morning; and perhaps all of you will admit that, in some way or another, you lose one, if not several hours in the course of every day, which might be well devoted to observation in a hospital. However this may be, you may be assured that this is the only sure manner of acquiring that ready tact which theory can never communicate.

That surgical *coup-d'œil*, which enabled such men as *Dessault*, *Boyer*, and *Dupuytren*, to discriminate from one end of a ward to another the cases of their various patients, belongs, no doubt, in a great measure, to individual aptitude;

but still it mainly depends upon the constant study of actual disease. It is only by the union of great personal experience in the observation and treatment of disease, and of due acquaintance with the recorded experience of others, that the student can ever hope to follow in the footsteps of these great men. Never forget that, whatever may be your destiny, you will ever retain the remembrance of those facts and precepts which have been presented, so to speak, to your eyes, and in which you have taken a personal part, while it will require a constant effort to bear in mind such as have been addressed only to the ear. The maxim of *Horace* applies, in an especial manner, to medical studies:—

*Segnius irritant animos demissa per aures,  
Quam quæ sunt oculis subjecta fidelibus :*

It is almost unnecessary to dwell upon this subject, as its truth is abundantly testified by the circumstance that your very co-students, in whom you have most confidence, are just those who become *internes* of the hospitals; and this situation, you are aware, can only be obtained after much diligence and long clinical attendance. An error, into which many of you are apt to fall, is from an over-zeal to observe and take notes of too many cases at the same time. This is not the right way to acquire a practical knowledge of diseases. While taking a general survey of all, let your attention be particularly directed to three or four cases at a time, reading at your leisure upon the diseases in question from such works as the treatises of *Sabatier*, *Boyer*, *Begin*, *Roche*, and *Sanson*, or of *M. Vidal*."

#### *Influence of Constitution on Surgical Diseases.*

"Persons of the melancholic temperament—which is owing to a predominance of the venous system—are more subject than others to various sanguineous effusions; and one of my colleagues, *M. Judas*, has published in the *Gazette Medicale* an interesting memoir on sanguineous tumours of the labia, which he has found to be of frequent occurrence in women of this temperament. Swellings of the glands are rather rare in those of a plethoric or of a nervous constitution, but are very common in lymphatic individuals. It has been observed that persons, who are wholly uneducated and whose encephalon is but ill developed, are more than usually liable to be affected with typhus and to sink from the effects of it. Again, the more consistent and plastic that the blood is, the less tendency there is to re-actions of any sort. The Russian soldiers,—in whom hebetude of mind, a strong and gross diet, a cold climate, a native want of cleanliness, render the blood so thick that it adheres tenaciously to the fingers of the operator—are but little subject to fever after the most severe wounds. In the greater number of those, on whom I operated during the Polish campaign of 1831, the pulse was quite normal on the fifth or sixth day after the operation, and their appetite was as good as ever. On the contrary, in men who are much addicted to study, or who are of a highly irritable temperament, the blood is usually thin and not sufficiently viscid."

#### *Every Surgeon has his own Methods.*

"You will find it very useful to follow the clinical courses of several surgeons; for every one has his own favourite views and favourite methods of treatment. By taking notes regularly of the practice of each, you will gradually become capable yourselves of judging of their respective merits, and you will acquire an exactitude and a precision of knowledge that will be most valuable to you through life. It is often very difficult to ascertain the exact relations between the cures obtained and the methods of treatment employed; it is only by an accumulation of results, carefully and cautiously collected, that we can judge of the superiority of one method over another."

#### *Influence of External Circumstances on Wounds.*

"In the last expedition to Constantine, (in Algeria), I cured a great number

of the wounded, in whom immense purulent collections had formed in the lower limbs, by prescribing freely brandy, coffee, fresh meat, &c. and by the use of warm dry applications. Be it remembered that the poor fellows had been lying in the mud for several nights, under a bitter cold atmosphere, and that their rations also had been curtailed in consequence of the deficiency of provisions. (A similar remark was made by Larrey and other surgeons of the French army during the disastrous campaign of 1814 in Germany.) Many a case of purulent infection may be prevented by the timely administration of an emetic, and the use of a nutritious and even a moderately stimulating diet. I wish particularly to guard you against the practice of specialising or localising diseases too much, and of supposing that, if you treat a wound locally well, you have fulfilled all the indications of enlightened surgery. Far from it; the good practitioner will never forget to watch the state of the general health, and endeavour to maintain the equilibrium of all the functions of the system."

*Familiarity between Students and their Teachers.*

"I shall take this opportunity of stating that it will always give me great pleasure to hear the opinions of any of you upon a case where they differ from those which I have formed of it. In this respect I wish to imitate the example set to hospital surgeons by that great master of our art, the late Baron Dupuytren. Although his professional and scientific susceptibility was excessive, he was not above accepting advice from whatever quarter it came. I remember a striking instance of this feature of his character. A patient, who was received into the Hôtel Dieu, was found on examination to present the symptoms common to a dislocation of the shoulder and to fracture of the cervix of the humerus. After delivering a most able lecture on the diagnostic symptoms between these two injuries, he confessed that in the present case he was a good deal puzzled, and that he intended to wait a day or two before determining the point. On the morrow, he received a long letter from one of the pupils of his clinique, in which the writer not only proved by very satisfactory arguments that the case was in truth one of luxation, but pointed out the best means of reducing it.

Dupuytren read the letter before his class, summoned the patient before him, discussed each argument separately with his youthful opponent, whom he had called to his side, and with his assistance reduced the dislocation amidst the loud plaudits of all the pupils."

*Injunction of kindness towards Patients.*

"You are about," says M. Sedillot with equal beauty and justness, "to find yourselves in contact with fellow-creatures afflicted with two of the greatest ills of humanity, pain and distress. They may often seem to you to be susceptible, irritable, and even unjust; but do not forget that they are your brethren in equality, and that the harder their situation is, the more it should commend your sympathy, and kind respect. Learn to forego the mere claims of science, and do not regard the unfortunates before you as if they were only objects for professional observation. Avoid especially the slightest indiscretion of language; and let the expression of your features, the sound of your voice, and every, even the most trivial, acts of your behaviour, always testify your entire confidence in the resources of nature, and in the remedial means of art. The unguarded disclosure of danger, or the allusion to possible accidents, has on many occasions produced the most disastrous consequences and changed a case of promising success to one of rapid and irremediable danger."

*Impolicy of explaining too much to Patients.*

M. Sedillot condemns the not unfrequent practice of explaining to patients, in the event of an operation being necessary, the relative dangers attending its performance, and those of leaving the disease to itself.

"The surgeon ought not ever to dread the responsibility of his opinions or of his acts, if he obeys the dictates of a conscientious conviction: by acting otherwise, he erroneously supposes that he escapes the consequences of his conduct, and moreover he often greatly compromises his chances of success. By revealing to a patient the chances of recovery and the dangers which necessarily attend an operation, you plunge him into a state of dreadful anxiety, and in truth you leave him only the mockery of a free choice. How is it possible for any uneducated person to judge of a matter, of which you cannot explain to him even the very simplest elements? In my opinion, the surgeon's duty is, after basing his judgments on science, to perform without hesitation what appears to him to promise the best hopes of success to his patient, who will have much more confidence in his medical attendant, and more cheerful expectation as to the result, than by adopting a contrary practice."—*Journal des Connoissances Medicales*.

#### CONDEMNATION OF MYOTOMY IN SPINAL DEFORMITIES.

M. Bouvier, we are glad to observe, in a memoir read before the Academy of Medicine in July last, and published in the *Annals of Surgery* for December, has exposed the utter fallacy and folly of M. Guerin's myotomic practice in cases of lateral deviations of the spine.

Our readers are probably aware that the "grand myotomiste" of Paris attributes almost all deformities whether of the trunk or of the extremities to a permanent contraction of certain of the muscles of the affected part; and, assuming this position as established, he very fairly concludes that, if these muscles are divided across, the deformity will necessarily be lessened, if not entirely removed. M. Guerin seems to regard the human body very nearly in the same manner as a sailor does his ship. When the latter wishes to square any yard, which is much aslant, he lets go on the lee side the ropes which are called the *braces*, and gives a pull upon those on the weather side. Just so does M. Guerin in his treatment of deformities; he cuts across the muscles and tendons which, according to his view of the subject, are *taught* (to use Jack's phrase), and looks for nature to give a pull upon the antagonist ones, that had been slackened.

If we could give credit to his own reports, his success has been truly marvellous; and certainly the rapidity with which, he tells us, many of his cures are effected, must add greatly to the value of his "*belle decouverte*." So simple, he goes on to say, is the operation which he performs, that he has divided nearly 40 (!) muscles or tendons, (according to the sub-cutaneous plan,) in one patient at a single sitting. Good news for all the wry-backed, stiff-necked, club-footed people of the world! it is their own fault if they remain one day without being made as straight and upright as He of the silver bow.

It is certainly a curious feature of the surgery of the last few years, this passion for dividing muscles and tendons, or for myotomy, as the operation has been called. We suppose that all the squinting people in Europe have been cured by this time; and as for club-feet, they are never heard of now. Poor Byron! why were you born before the present day? Many a vexatious moment might have been spared thee, had the star of thy nativity not arisen until the fourth decennial of this century. But, alas! the fates are very wilful, and too often make use of any disease or deformity in the body to whip weak man for the follies or vices of his mind.

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\* It has been remarked as a curious circumstance that three of the most distinguished men of the present century were club-footed—Byron, Scott, and Talleyrand.

To revert to the subject from which we started, we are glad to find that some of the French surgeons themselves are inclined to oppose the absurd practice to which we have been alluding. M. *Bouvier*, after detailing several experiments on the dead body with the view of ascertaining the truth of M. *Guerin's* theory of spinal deformities, very pertinently remarks:

"These facts speak for themselves. Since the resistance of the spine remains the same after the division of its muscles, and since, on the contrary, this resistance becomes small, when the ligaments are divided, although the muscles are intact, it is evident that these latter cannot be taken into account; and we scarcely require any other arguments to prove the dissimilitude between curvature of the spine and genuine muscular deformities—in which the resistance ceases, at least in a great measure, after the muscles have been divided, whereas the section of the ligaments produces little effect, if the muscles remain intact. The fundamental character of spinal deviations is unquestionably attributable to a lesion of the osteoligamentous apparatus of the vertebrae, and not to a mere spasmodic contraction of the dorsal muscles.

But, independently of the proofs furnished by post-mortem examinations, it is an easy matter to satisfy ourselves that during life there is not any tension or resistance of the muscles on the concave side of a deformed spine. We have only to be on our guard not to let ourselves be imposed upon by the contraction of these muscles to make us believe that there is any permanent shortening of their fibres. When the person is standing up, the contracted muscles of the back counterbalance the weight of the trunk, and they may therefore exhibit at that time a degree of tension proportionate to their physiological shortening. Now this tension is most decided on the convex side of the curved spine, in consequence of the body leaning over to the opposite side. One would need to be strangely pre-occupied with a favourite idea to attribute this condition of the muscles on the convex side to their abnormal retraction. If we try to bend the trunk in the opposite direction, then the muscles of the concave side appear to be stretched, because they then make an effort to maintain the equilibrium of the body."

M. *Bouvier* closes his memoir with the following two conclusions:

1. The section of the muscles of the back is absolutely without an object, and cannot produce any useful result in deformities depending upon a lateral deviation of the spine.

2. The treatment of such deformities must be based on remedying the shortened condition of the concave side of the spinal column, its muscles always retaining sufficient length not to present any resistance to the *redressement*.

Here might terminate the examination of this question for any one who will think for himself and study the facts which we have mentioned without any prepossessions or after-thoughts.

But M. *Guerin* and his disciples, ill at ease in the circle of positive pathological facts, have appealed to the results of their experience and the success attending their practice—a species of argument which is certainly very convenient, since it dispenses with every other. But even on this ground we are satisfied that they are completely at fault, that their vaunted successes have nothing real in them, and that experience will agree with theory in condemning the division of the muscles of the back in the treatment of spinal deformities.—*Gazette Medicale*.

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#### M. SERRE ON THE INFLUENCE OF THE OPERATION FOR CATARACT IN ONE EYE ON THE SIGHT OF THE OTHER.

In 1834 I operated for cataract on the right eye of a patient, on whose left eye *Delpsch* had operated three years previously. For two years and a half after

this first operation, he retained the sight of the left eye ; but, during the latter six months, it had become more and more weak, until it was entirely lost.

A few days after the second operation, however, I was not a little surprised to find that the patient had recovered the sight of both eyes. At first I hesitated to believe it ; but, on cross-examining the patient, his statement was uniformly consistent.

Shortly after this case occurred to me, another cataract patient was admitted into the hospital, in nearly the same condition as the former one. He had been previously operated upon for a cataract in the left eye by an itinerant oculist, and had regained the sight of the eye for some time, but eventually he had again lost it. I couched the right eye ; and the result was, that the vision in both eyes was restored. Unfortunately this double success was not of long duration ; for the recently operated eye became severely inflamed, and at length its pupil was obliterated. The sight of the right eye nevertheless remained, although it had been lost for nearly twelve months before the second operation.

For seven years I did not meet with a case similar to the preceding ones ; although during that time I must have operated on upwards of 200 cataract patients. In July of last year, on taking charge of the eye-patients in the hospital, I found a man on whose left eye *M. Lallemand* had operated about two months before, but who had not yet regained his sight, in consequence it seemed of that sort of amaurotic condition which sometimes follows the depression of the lens. There was nothing unusual in the appearance of the pupil, and no symptoms of inflammation existed ; and yet the patient was so blind that he could scarcely distinguish light from darkness. I determined therefore to operate on the other eye ; and on the 14th of July I accordingly performed the retroversion of the right lens. From the fourth day after the operation, the patient could perceive objects, and I very naturally attributed this recovery of sight to the operation ; but this was a mistake ; for on examining the right eye the displaced lens was observed to have re-ascended. The truth was, that it was the other, the left, eye that the patient was able to see with.

As soon as the inflammatory symptoms caused by the operation had subsided, I again displaced the right lens, and lodged it fairly in the substance of the vitreous humour. In proportion as the sight of this eye became stronger, that of the other eye continued to improve ; so that when the patient left the hospital on the 1st of September, he could see pretty distinctly with both eyes.

It may be asked how are we to explain this curious circumstance ? Let us first observe that the three patients alluded to in the preceding remarks had, each of them, recovered for a short time the sight of the eye first operated upon, although they subsequently lost it again ; and that when the other one was operated upon, it (the former one) still retained its transparency, as well as the regularity of its pupil, so that the rays of light reached the retina without obstruction. The sensibility of this nervous expansion seems to have been only temporarily paralysed, and to have been in such a condition as to require for its re-excitement merely that a lively impression should be made on the retina of its fellow.

Let it be remembered that such cases as we have now described are very different from those which we find recorded by some oculists, and in which we are told that patients with double cataracts have recovered the sight of both eyes after the removal of one of the lenses. We are unwilling to deny positively the truth of all such statements ; although it must be confessed that they appear rather marvellous.

On the contrary, if cases, similar to those I have observed, are occasionally met with in practice, may we not ask if it might not be possible, in the treatment of certain amauroses, and more especially in the asthenic form of the disease, to avail ourselves of the light as a stimulant, where the loss of vision is on one side only ? Again, far from abstaining to operate on a cataractous eye when the patient sees but feebly with the other one, may we not in certain circumstances



try the operation with the express view of re-awakening the sensibility in the latter! And lastly—contrary indeed to the opinions of many oculists—may not the excitement produced by the operation or by the direct action of the light serve, in some cases of cataract complicated with incipient amaurosis, to contribute to the restoration of sight?

These are questions well meriting the attentive consideration of every scientific ophthalmologist.—*Gazette Medicale*.

### M. SERRE ON THE INFLUENCE OF INFLAMMATION IN ONE EYE ON THE RESTORATION OF SIGHT IN THE OTHER.

The following two cases are interesting, and contribute to throw some light on the preceding article. They are communicated to the *Gazette Medicale* by M. Serre, the Professor of Clinical Surgery at Montpellier.

*Case 1.*—While treating one of the cases mentioned in my former paper, I had under my care a patient in the left of whose eyes the pupil was obliterated, and in the other one there was an almost complete amaurosis. As all the means which I had tried to relieve the blindness, had proved quite ineffectual, I determined to try to form an artificial pupil in the left eye. With this view I made a small incision about the centre of the cornea, and introducing the hook used by Beer, I laid hold of the iris near to its point of junction with the ciliary body, and detached it in such a manner that I could lodge it in the opening of the cornea, and thus permit a passage to the rays of light to reach the bottom of the eye.

This operation succeeded beyond my expectations; so far at least as regarded the establishment of an artificial pupil; for this continued to preserve its original dimensions; but, from the moment that I first detached the iris, I perceived that the deep parts of the eye were too much injured to permit me to anticipate a recovery of sight. The inflammation, however, excited by the operation, had this good effect, that the sight of the other eye was very sensibly improved. Alas! however, this was only a deceitful promise; for, as the inflammatory symptoms in the one eye subsided, the sight of the amaurotic eye gradually decreased, until the patient was as blind as ever.

*Case 2.*—A patient, under my care, had a cataract in the right eye and a strongly marked amblyopia in the left one. I operated for the cataract, and it was observed both by myself and by several of the attending students that the sight of the left eye was very considerably improved by the inflammation which was set up in the other. The operated eye became subsequently affected with purulent ophthalmia, in consequence of the patient having imprudently exposed himself to cold, and was at length irrecoverably lost; but fortunately this accident, so far from injuring the improvement in the amaurotic eye, seemed actually to have confirmed it more.

Reasoning upon the facts now mentioned, I tried the effect, in one case of amaurosis, of introducing a cataract needle into the posterior chamber of the eye, so as slightly to titillate the portion of the retina at the inferior part of the eye. A very trifling result, and that was of only temporary duration, followed the attempt; probably the degree of inflammation induced was not sufficient for the purpose.

When I consider the good effects which the application of caustic to the cornea, or even the mere repeated friction of the eyelids, produces in some cases of amaurosis, I am much inclined to hope that something may yet be discovered in this direction for the relief of this most unfortunate malady; and that it may

be from our not yet understanding how to accommodate our remedies to each case, that hitherto so little success has attended our labours in this department of ophthalmic medicine. Instead of acting merely on the teguments of the eye and on the cornea, we should have our attention directed to the frontal nerve, to the ciliary ganglia, the iris, and even to the retina itself, before abandoning a case as utterly hopeless. As a matter of course, it is only in cases where the humours of the eye retain their transparency that the suggestion now thrown out is meant to be at all applicable.—*Gazette Medicale.*

## REVIEW OF THE OPHTHALMOLOGICAL LITERATURE OF 1840 AND 1841.

### *Fistula Lachrymalis.*

M. *Rognetta* objects in strong terms to the very mechanical mode of treating this disease, that is too generally followed, and suggests another which, in his hands at least, has superseded, he says, the use of the knife, as well as of probes, canulæ, &c. afterwards. Certain it is that a number of cases do seem to be rather aggravated than amended by the usual practice. Let us consider for a moment what this is. First of all leeches are applied; then cataplasms, then fumigations by the nostrils, injections by the lachrymal puncta, and the application of astringent lotions or ointments are successively had recourse to. Finding, perhaps, that no good has been obtained, the surgeon now resorts to the use of the knife, and of the canula; this latter instrument generally requires to be withdrawn after a short time, and the wound contracts or may close up entirely. A second operation is then deemed necessary; and perhaps this one does not prove more successful than the first.

"I have long opposed," says M. *Rognetta*, "this mode of practice as being alike unscientific and most unsatisfactory. Often it exasperates the disease; and in other cases it only palliates without curing the evil. As long as surgeons view fistula lachrymalis as nothing else but a mere mechanical obstruction, we cannot expect any improvement in the mode of treating it. The canal is stopped up, they tell us, and we must try to open it and keep it so. Hence has arisen the use of sounds, canulæ, permanent setons, and all such mechanical contrivances.

In vain the system re-acts against this mode of treatment in a variety of ways; and often the disease is reproduced again and again; but the surgeon closes his eyes, and regards the case merely as one of more than usual obstinacy. Unless the dynamic state of the disease is understood and attended to, we cannot expect any improvement in our practice. Whoever has examined in the dead body the condition of the lachrymal organs in a state of disease, must have observed that the canal for the passage of the tears into the nostrils is obstructed by the swelling of its mucous membrane, especially of its follicles, and by a sort of thickening and infiltration of the sub-mucous tissue. Is it not obvious that whatever increases irritation must necessarily aggravate the very existing mischief? For some years past I have acted on the principle of endeavouring to remove the inflamed condition of the mucous membrane, and to correct the secretion of its follicles, and have met with a most pleasing success in eight or nine cases of the disease."

M. *Rigaud* concludes some observations on the same complaint by remarking that, "in young subjects a great number of lachrymal tumours become spontaneously cured." The improvement of the general health and the development of the organs at different periods, seem to him to have a much greater influence than the use of fumigations, lotions, &c.

Dr. *Ridder* relates a case in which the use of chloride of lime injections, fric-

tions with calomel ointment, fumigations with strong chamomile tea, and the administration of mercurials internally, effected a cure of a case which had long resisted previous treatment.

*Wound of the Orbit; Rupture of the Optic Nerve.*

Mr. Phillips has recorded, in the London Medical Gazette for January, 1841, a curious case of this very rare injury. A man, standing at the head of a horse which had fallen in the street, was suddenly struck in the face upon the animal raising itself up unexpectedly: the blow was so violent that he was thrown down by it. He was of opinion himself that it was not the head of the horse, but some part of the harness that struck him. There was a bleeding wound between the left eye and the nose, extending for about three-quarters of an inch from the internal canthus to about an inch below the eyebrow. The lachrymal ducts and the tendon of the orbicular muscle were divided across; but the eyeball had not suffered. The sight of the opposite or the right eye was lost from the moment of the accident; and yet no alteration could be perceived in any part of it, except extreme dilatation of the pupil, which did not contract even upon the approach of a lighted candle. The patient complained of slight headache, but nothing indicated the existence of any lesion within the cranium. Delirium, however, and stupor supervened on the following day; and, as these symptoms were attributed to the invasion of meningitis, the patient was accordingly bled, purged, and treated with repeated doses of calomel and antimony. In the evening convulsions came on; while the left arm and leg were stiff and contracted, the right extremities were in constant motion; the pupil of the right eye was now found to be contracted. As the patient could no longer swallow pills, calomel was applied on the tongue; a blister also was applied to the nucha. The left side and extremities became subsequently paralytic, while the right were tranquil. He died convulsed on the fifth day after the accident.

*Dissection.*—There was a marked vascularity also and a copious effusion of lymph between the arachnoid membrane and the pia mater. A quantity of serum and pus was found in the lateral ventricles. Upon lifting up the anterior lobes of the cerebrum, they were observed to adhere by their lower surface to the dura mater in consequence of effused coagulable lymph. The right optic nerve was found to be fairly torn across; the two ruptured ends adhering together only by a thin membrane, close to the optic foramen. The base of the brain, from the medulla oblongata to the commissure of the optic nerves, was invested with a thick covering of plastic lymph, which partly concealed the roots of the nerves. At the posterior part of the right anterior lobe, and near to the seat of the lacerated nerve, there was a small spot where the cerebral substance was in an ecchy-mosed and softened state. This injury of the encephalon, as well as the laceration of the nerve, had been caused by a spicula or fragment of bone, detached from the circumference of the optic foramen. Upon examining the orbital wound attentively, there was found a small aperture, by which a probe could be made to pass through the breach in the ethmoid bone into the cranium. This showed that the instrument, which the horse's head had driven in the direction of the opposite orbit, had been pointed, and that it must have struck with force on the *os planum*, passing from below upwards to the cerebral lamina of the ethmoid bone of the opposite side.

Dr. Rognetta appends the following observations to the history of the preceding case.

"Although there are several analogous cases recorded in surgical works, the present one is in some respects almost unique. The most remarkable circumstance connected with it is the direct lesion of the optic nerve of the side opposite that of the wounded orbit. We know that the optic nerve may be wounded truly in the orbit by a pointed instrument entering by its external canthus; for,

as it describes a curve with its convexity outwards, it is readily accessible from this part. But, before the case related by Mr. *Phillips* was made known, we had never heard of an injury of the intra-cranial portion of one optic nerve by an instrument which had entered by the internal canthus on the other side.

It is worthy of notice that in this, and in other somewhat similar cases where the optic nerve alone has been injured, the ball of the eye usually does not exhibit any outward marks of the lesion; the only symptom present being amaurotic blindness. In a dissection made by *Cheselden* and in another by *Morgagni*, the optic nerve had been for a length of time disorganised from spontaneous disease; and yet the eye in both instances retained its normal features in every respect. Do not such facts show that the optic is purely a sensory nerve, and has nothing to do with the nutrition of the eyeball?

*Dupuytren* used to mention the case of a fencing-master, who met with his death in the following manner. His adversary's foil, though guarded with a button, pierced through the wire-fence of his masque, and struck him at the base of the right upper eye-lid, making a small wound there. He fell down, and was carried to the Hôtel Dieu. On the morrow, alarming encephalic symptoms, delirium, convulsions, coma and fever, supervened, and he died two days afterwards. On dissection, the orbital plate of the frontal bone was found to have been pierced by the point of the foil, which had penetrated so deep as to wound the anterior lobe of the brain. Another case, very similar to this one, occurred to one of the pupils of the Polytechnic School; he remained hemiplegic.

The same sort of accident has been known to be caused by a blow with the point of a cane, of an umbrella, of a fork, of an awl, &c. &c. In a few rare instances, the optic nerve has been lacerated by a violent luxation of the eye-ball itself.

#### *Trichiasis.*

In the *Annales d'Oculistique* there is a memoir by M. *Bourjot* on the different operations which have been recommended for the cure of this deformity. He gives a decided preference to that proposed and practised by M. *Jaeger*, and which has been adopted with success by M. *Cunier*.

It consists in making a horizontal incision of the skin of the eyelid near to its free border, carefully exposing the bulbs of the cilia and then excising them. M. *Bourjot* directs the attention of his readers to the promptitude with which supernumerary cilia are developed on the internal surface of the eyelid, and to the difficulty often experienced in exposing those that are diverted from their natural position.

A case, related in the *Netherlands Lancet*, shows with what care the eye should be examined, when it is affected with a chronic disease. A poor fellow had been suffering for several successive months from a most painful ophthalmia, attended with great photophobia and an excessive flow of tears, when he applied for relief to Dr. *Snablie*, the surgeon major of Breda. A minute lash had become inverted and kept up a constant irritation on the eye; no sooner was this extracted than all the symptoms vanished.

#### *Ptoſis.*

Dr. *Alessi* has recorded in an Italian Journal, the *Filiatre Sebezio*, a curious case of hereditary falling down of the upper eyelid in several members of a family in Sicily. The man, who first applied to him, was affected with an incomplete ptoſis of the left upper eyelid; it was more considerable at the outer than at the inner canthus. When he wished to look at an object with this eye, he was obliged to turn his head round over his right shoulder. On being questioned how this malady had occurred, he told Dr. A. that it was hereditary in his family, for that both his father and his son were affected in a similar manner.

By a bizarre singularity, the males alone were affected; and what makes the

occurrence still more strange, is that the deformity changed sides at each generation. Thus in his father's case it was the right eye that was affected; in himself, it was the left one; in his son it was again the right; and in his grandson it was the left. Dr. Alessi satisfied himself of the truth of the statement by personally examining his son and grandson. He (the Dr.) was of opinion that the falling down of the eyelid was owing, not to any paralysis or atony of the levator muscle, but to an unusual flatness or depression of the supra-ciliary arcade of the frontal bone, so that the integuments, although not abnormally lengthened, hung down in front of the eyeball. Dr. A. proposed an operation, but none of the patients would submit to it.

#### *Mechanical Lesions of the Eye.*

Dr. O'Beirne has published in the Dublin Medical Press a curious case in which a small nail was accidentally driven into the eye-ball, and lodged there for many days.

The patient, a woman, said that, while shaking a carpet, she felt something sharp strike with force against her right eye. She became sick immediately, and shortly afterwards she found on her apron a gelatinous substance, which is supposed to have been the lens. When admitted into the hospital, there was so much tumefaction and ecchymosis of the eye that the cornea could scarcely be perceived, except at one point, where there was seen to be a depression, from which a bloody fluid oozed out. There was no appearance of any foreign substance in the eye; and indeed the woman herself said that the nail had been found on the carpet. In spite of the most active antiphlogistic treatment, the inflammation and suffering increased for nearly a fortnight; and then an eschar formed about the centre of the cornea. Upon making a puncture there, a considerable quantity of purulent matter flowed out with decided relief to the symptoms. Dr. O'B. while making the puncture, thought that he felt the point of his lancet strike upon a hard substance, and therefore suspected that something was lodged in the eyeball. On the following day, his suspicions were confirmed; and he then extracted, not without some difficulty, a flat-headed nail of about three quarters of an inch in length. The inflammation quickly subsided; but, as a matter of course, the sight of this eye was irrecoverably lost.

MM. Cunier and Stievenart have related cases in the first vol. of the *Annales d'Oculistique*, where fragments of fulminating capsules had been driven into the eye. In one case an entire capsule was extracted between two and three months after the occurrence of the accident.

#### *Wounds of the Supra-ciliary Region.*

M. Constatt has, in the first volume of the *Annales d'Oculistique*, established by numerous historical and necroscopic researches that the blindness, which sometimes follows wounds of the supra-ciliary region, is, in almost every case, owing to some other cause than to an injury of the frontal nerve, as is usually imagined. M. Walther, in a recent number of the *Journal der Chirurgie und Augenheilkunde*, alludes to several cases in which no blindness occurred, although this nerve had been positively divided either accidentally, or designedly, for the relief of neuralgia.

When loss of sight follows wounds about the forehead, he is inclined to attribute it to some simultaneous derangement of the organs contained within the orbit of the cranium, and not to any direct injury of the frontal nerve.

M. Walther endeavours to show that there is no direct communication between the frontal nerve and either the optic nerve or the retina; that even with the ciliary system of nerves its communication is only indirect through the medium of the nasal nerve; and that impressions on it, (the frontal), are transmitted to the eye through the medium of the encephalon. According to this view, there

heretofore no direct, but only a reflex, continuity of action.

The nutrition of the eye is disturbed by any lesion of the ganglionic nervous filaments, which are distributed on this organ. Thus diseases of the neck, or operations performed in this part, will sometimes produce ophthalmia, or even an atrophy of the eye. If, then, says M. *Walther*, lesions of the great sympathetic nerve have so marked an effect on vision, why should not an injury of a branch of the trigeminus, which is well known to be so intimately connected with the eyeball, produce the same results?

The French Medical Gazette adds to its analysis of M. *Walther's* paper a case where blindness followed a slight wound of the forehead, although there was no obvious commotion either of the eyeball or of the encephalon. The blindness in this case was owing not to amaurosis but to the presence of a cataract: in consequence probably of the nutrition of the eye being disturbed.

#### *Purulent Ophthalmia of Armies.*

For the last few years the Belgian army has suffered from an unusually severe epidemic of purulent ophthalmia, which has produced very disastrous effects on numbers of the soldiers who have been affected with it. A vast number of memoirs and books have been already published, not only in Belgium itself, but in other countries, as in France, Germany, and Russia, medical men from which have been specially sent by their respective governments to report upon the disease. As might be expected, there has been no little difference of opinion as to the cause and nature of the ophthalmia in question; some writers contending that there is something specific in its origin and character, and that, differing in these respects from all the ordinary forms of the malady, it is essentially allied to those frightful epidemics which in all ages have afflicted the land of Egypt; while others asseverate with as much zeal that it is only a more than usually severe form of catarrhal or purulent ophthalmia.

The former view the disease as essentially contagious, and account for its wide diffusion on this principle: the latter hesitate to admit this doctrine, at least to so great an extent as has been alleged.

Dr. *Werneck* of Salzburg, a high authority on ophthalmology, is a zealous advocate of the first set of opinions; and, after adducing many arguments to prove the essentially specific nature of the ophthalmia, from which the Belgian army of the present day, and the French and British armies about the beginning of this century, have suffered, he insists very particularly on the necessity of attending to the state of the eyelids in all patients affected with the disease;—for it is they, says he, that are “le véritable terrain où l’ophthalmie Egyptienne germe et développe successivement tous ses effets.”

M. *Decondé* has written some valuable papers on the different kinds of purulent ophthalmia. His researches have been directed in an especial manner to ascertain the effects of various remedial applications when blended with any contagious purulent discharge, whether from the eyes or from the genital organs.

In reference to the matter of gonorrhœa, the following are the conclusions to which he has come: 1. The discharge ought to be stopped as quickly as possible, as sooner or later it may produce a most severe purulent ophthalmia, if the matter be accidentally applied to the eye: 2. A strong solution of the nitrate of silver has the effect of altering the nature of the discharge, and destroying its contagious virulence: 3. The gonorrhœal discharge being the result of a morbid state of the mucous membrane more deep-seated and more enduring than that induced by injections into the urethra, it is always well to continue the use of these remedies for several days after the cessation of the discharge; otherwise this will most probably re-appear and resume all its characters.

With respect to purulent ophthalmia, M. *Decondé*, after detailing at great length a number of experiments with chloride of lime and other agents, infers that healthy troops, if brought into contact with an infected corps, may be pre-

served from the disease by the soldiers washing their eyes several times in the course of the day with a solution of chloride of lime.\* This simple suggestion certainly deserves to be fairly tried; as no possible harm can result from the use of so simple a means.

On the whole, M. D. is decidedly friendly to the *ectrotic* method of treating all forms of purulent ophthalmia, by the application of the nitrate of silver to the conjunctiva, more especially to that of the eyelids. M. Goëze, another writer in the *Annales d'Oculistique*, "gives a decided preference to this practice, and exposes the utter insufficiency of antiphlogistic measures, however vigorous, to arrest the progress of the disease."

M. Ricord, also, approves of the use of the nitrate, along with the application of poppy fomentations, and of extract of belladonna mixed with blue ointment. Local bleeding also may be necessary at the same time.

Dr. Hancke, of the Prussian army, recommends very strongly the application of iodine and of some of its preparations to the diseased surfaces: he is opposed to the use of copious depletion, and of drastic medicines.

#### *Purulent Ophthalmia of New-born Infants.*

M. Reville-Parise tells us, as the result of his experience in this disease, that leeches, blisters, and emollient applications to the eyes, are rather hurtful than advantageous; and that by far the best mode of treatment consists in the repeated instillation of a solution of the nitrate of silver—from two to four grains of the salt to an ounce of fluid—along with the exhibition of mild purgative medicines.

M. Cunier is equally favourable to the employment of the nitrate, but he prefers a much stronger solution, or, what he considers still better, an ointment made by blending the salt with lard. He advises that the action of the application should be confined chiefly to the conjunctiva of the palpebræ. M. Cunier states, as the result of his extensive experience, that in by far the greater number of cases of purulent ophthalmia in new-born infants, the disease is attributable to the direct application of leucorrhœal matter to the eyes during the act of delivery.

Dr. Durre of Halle employs an ointment—composed of nitrate of silver two grains, acetate of lead three grains, and lard three drachms—also blisters behind the ears, and a weak solution of the corrosive sublimate—one quarter of a grain to an ounce of water. He recommends also that frequent doses of calomel and rhubarb should be given at the same time. When the purulent discharge diminishes and gives way to one that is more watery, an eye-wash with the laudanum liquidum of Sydenham is one of the best applications.

Dr. Rupp tells us that he trusts chiefly to the use of a solution of the corrosive sublimate, one grain to the four ounces of water, as a topical remedy in the treatment of purulent ophthalmia in infants.

M. Schwarz recommends the application of strong tartar emetic ointment to the nape of the neck, to produce a full crop of pustules, with the view of drawing the morbid action from the eyes.

#### *Scrofulous Ophthalmia.*

M. Negrier has, in a very able memoir published in the *Archives Generales*

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\* The solution of the chloride of lime has, according to the experience of M. Decondé, the same counteracting and neutralizing effects on the matter of gonorrhœa. How far we can credit his assertion that "the gonorrhœa and the ophthalmic mucous may be deposited with impunity between the eyelids or the urethra, provided the operation be preceded or followed immediately by instillation of the chloride," we must leave our readers to determine for themselves.

for last May, directed the attention of the medical profession to the remedial powers of various preparations of walnut-leaves in scrofulous disease. The infusion and extract are the best forms for internal administration; and a very useful collyrium is prepared from the former, to which the tincture or the wine of opium should be added. Iodine or some of its preparations may be advantageously given at the same time.

The muriate of barytes, as an internal remedy, is highly spoken of by Dr. *Payan* of Aix: he considers it as one of the most valuable anti-scrofulous remedies that we possess; more especially in such cases where much irritability or erethism exists in the eyes or elsewhere.

Dr. *Otto* has published several papers in *Caspar's* Wochenschrift to prove the efficacy of the extract of conium, administered in tolerably large and gradually increased doses.

Dr. *Erdman*, in *Graefe and Walther's Journal*, dwells at some length on the excellent effects of quinine in some of the most obstinate cases of scrofulous ophthalmia. His practice agrees in this respect with that of many of the British oculists.

#### *Syphilitic Ophthalmia.*

M. *Sichel* says that his subsequent experience, since the publication of his work on diseases of the eyes in 1837, has quite confirmed the accuracy of the description which he then gave of the venereal form of iritis, and of the diagnostic peculiarities by which it may be recognized. He insists particularly, 1, on the discolouration of the iris, sometimes in its whole extent, but always at its inner circle or circumference, to a coppery red or to a violet hue, and, 2, on the greater degree of tumefaction of this inner circle, than in the other kinds of iritis.\* These two characters, (which, he says, are *constant*,) are owing to a particular kind of vascularity in the smaller circumference of the iris. They are usually first perceived at its upper and inner corner; and even in the advanced stages of the disease, they are most conspicuous there. The pupil at this part is generally angular or jagged from being irregularly drawn upwards and inwards. This appearance is owing, at least in some cases, to an adhesion from deposited lymph between the pupillary margin and the crystalline lens. Although we cannot give any satisfactory reason for this part of the iris being more inflamed and more liable to be the seat of effused lymph than other parts of its circumference, the circumstance that such is really the case seems to be well established by the observations of M. *Sichel*. The irregularity of the pupil now mentioned, although not of constant occurrence, is observed in the majority of cases of syphilitic iritis, and is therefore a valuable diagnostic symptom, although certainly not so much to be relied on as the two former—viz., the peculiar discolouration and tumefaction of the iris. Occasionally the circumference of the pupil exhibits minute elevations or granules of a yellowish hue, on which may usually be perceived dark looking blood-vessels: these have been compared to condylomata in other parts of the body.

This form of iritis may always be regarded as a symptom of constitutional secondary or tertiary syphilis. We may be assured that the patient has had primary sores, although perhaps none of the usual secondary symptoms have subsequently appeared.

Surgeons may differ among themselves as to the uniformity of the morbid appearances of the iris, which are so much relied on by M. *Sichel* as characteristic of the syphilitic form of iritis; but that they are of sufficiently frequent occurrence to merit scrupulous attention will not be disputed by any. Let it be re-

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\* The iris seems, says M. *Sichel*, as if it was thickened by a tomentose or flocky layer of matter deposited upon its surface, especially near its pupillary margin.



membered that we are not to look for them at the very commencement of the disease; for at first the iris is observed to be only somewhat discoloured, but without exhibiting a coppery hue; nor does it yet show any tomentose appearance; the pupil also retains its circular shape, and is only somewhat contracted and less moveable than in health. But, if an anti-syphilitic treatment be not adopted, the characteristic phenomena described above will inevitably be developed.

M. Velpeux, has, we should state, questioned the accuracy of all M. Sichel's statements, and very positively asserts that there are no appearances which are at all characteristic of the syphilitic form of iritis during the acute stage of the symptoms; and that it is only when it has passed into the chronic stage that they are of any value. A case of acute iritis being given, there is not a single symptom, according to him, which can be said to distinguish one form or kind of the disease from any other.

### *Occasional Forms of Ophthalmia*

Inflammation of the eye has been occasionally observed to assume quite an intermittent character, and to require the use of bark or other anti-periodic remedies for its cure.

There is a very dangerous form of the disease which seems to be connected with a vitiated state of the fluids; it was noticed in several instances during the prevalence of the epidemic cholera, and was usually accompanied with ulceration of the cornea. In some cases, the humours of the eye escaped, and the organ was immediately destroyed.

Another very unfavourable kind of ophthalmia has been occasionally seen to occur in puerperal women, more especially after inflammatory attacks of the abdomen soon after delivery.

M. *Constatt* has described in the *Annales d'Oculistique* a troublesome form of the disease, which he has observed in several women during lactation. "It is announced by an irritation and subsequently a congestion of the conjunctiva, assuming the characters of a catarrhal, and sometimes also of a vesicular, ophthalmia. Occasionally it makes its appearance after some rheumatic affection of the joints or eruption on the face. From the conjunctiva the inflammation usually spreads to the cornea, and is accompanied with oppressive and darting pains in the eye and supra-orbital region; there is seldom however much intolerance of light. In all the cases observed by M. *Constatt*, an abscess formed in the cornea, usually about the centre of it. He is inclined to attribute this peculiar ophthalmia to an impoverishment of the blood from over-suckling, and recommends therefore in the treatment of it an abstinence from all depletions. The use of blisters behind the ears, and of mild cordial tonics, combined perhaps with colchicum or guaiac, internally, is recommended by him. The application of a solution of the nitrate of silver, alone or with laudanum, is the best local remedy. As a matter of course, the woman should cease suckling, and live on a generous, but unirritating, regimen.

It may be mentioned here that M. *Magendie* states that he has often observed an ulcerative ophthalmia in dogs, which were kept half-fed for a length of time, or into whose veins water or serum had been injected. The same circumstance has been noticed in patients exhausted from profuse losses of blood, long-continued purulent discharges, &c.

### *Opacities of the Cornea.*

Several cases of the successful treatment of the *pannus cellulosus* with the cod-liver oil are recorded by MM. *Cunier* and *Delcourt*.

The *pannus vascularis* is often induced and kept up by a granulated state of the mucous surface of the eyelids: when this is rectified, the former disease is generally observed to diminish of itself. Signor *Riberi* of Turin has recently

published a monograph, entitled, *Della ceratitide prodotta dalla degenerazione granellosa della Congiuntiva Palpebrale. Con osservazioni.*

MM. *Cunier* and *Hairion* report favourably of the use of the hydriodate of potash in some opacities of the cornea. The occasional application also of the solid nitrate of silver has succeeded in a good many cases.

#### *Staphyloma.*

Several cases of pellucid staphyloma, in which the cornea is abnormally protuberant, but without losing its transparency, have been recently recorded in various medical journals. The evacuation of the aqueous humour, the occasional gentle application of the nitrate of silver to the sclerotic coat or the inside of the eyelids, compression of the eyeball, the use of sternutatories, blisters, &c. have been recommended in the treatment of the disease.

There is a form of staphyloma in which the cornea becomes so soft and yielding that it retains the mark of any impression made upon it. There is always a greater or less opacity in such a state of things; the disease seems to be owing to a softening of the texture of the cornea. It is described by *Rosas*, in his *Handbuch der Augenheilkunde*, under the name of *Atony of the Cornea*.

*M. Delvigne* has described a case in which there was a small transparent tumour or vesicle situated on the cornea a little to the outside of its centre.

The opaque or ordinary form of staphyloma is unfortunately a not unfrequent result of epidemic and purulent ophthalmia.

*M. Ousevoort*, the distinguished oculist of Holland, has described in his journal the mode he adopts in removing the diseased cornea. *M. Guépin* prefers the actual cautery to the knife in certain cases, and reports several instances in which he employed it.

#### *Formation of an Artificial Pupil.*

*M. Sichel* is inclined to attribute the frequent failure of this operation rather to the bad selection of the cases for its performance than to any defect or insufficiency in itself. The great difficulty lies in knowing how to adapt it to each individual case, and also when not to undertake it at all.

According to this experienced surgeon, one of two methods will suffice for performing this operation in every case; provided there is not a complete opacity of the cornea, disorganization of the iris, or other serious lesion of the eye, which must render all operations utterly fruitless. These two methods are—1, the detachment of the iris (*iridodialysis*) and 2, excision of part of it (*iridectomy*).

The former may generally be practised whenever we have to establish a pupil at the upper and inner, or at the lower and inner part of the iris; and the latter when the artificial aperture is to occupy the outer, whether this be upper or lower, part of this membrane.

In performing *iridodialysis*, we should make an opening into the cornea more or less near its centre: this should be free but not exceeding two millimetres in extent. A small hook is next to be introduced, and the iris laid hold of at its junction with the choroid, and detached from its adhesion. The seized portion is then to be drawn out and fixed between the edges of the wound in the cornea.

To perform *iridectomy*, we have to make an opening into the anterior chamber more or less laterally according to the situation of the transparent portion of the cornea; next to insert a small forceps, catch hold of a fold of the iris with the blades, draw it out, and excise the projecting portion with fine scissors.

*M. Sichel* assures us that he has seldom failed in obtaining success by adopting either one or other of these modes of operating in almost any case, where the state of the eye in other respects did not preclude the hope of effecting any good.

The application of ocular myotomy, or of the section of one or more of the

muscles of the eye, so as to produce a squint, in lieu of forming an artificial pupil, has been approved of by MM. *Cunier, Guépin, Professor Serre, &c.* We extract the following passage from a letter of the latter gentleman on the subject : . . . . . " Among the various applications of ocular myotomy, there are few, in my opinion, so rational as that which proposes to bring the pupil in relation with a portion of the cornea which retains its transparency. The operation has the great advantage in such a case of being substituted for that of forming an artificial pupil, which must always be one of much difficulty and uncertainty."

### Cataract.

An elaborate memoir on this subject appears in the *Esculape*, from the pen of Professor *Sichel*. The principal positions, which he endeavours to establish, are these :—

1. That capsular cataract, though infinitely more rare than the lenticular form, is unquestionably of occasional occurrence; its chief diagnostic features being the thickening and elevation of the capsule, and the opacity exhibiting more or, less distinct striae or spots on its surface: the posterior half of the capsule is much less frequently the seat of opacity than the anterior. 2. Capsular cataract is generally the result of inflammatory action; lenticular cataract is rarely so but is usually induced by age, or by some other causes hitherto unappreciable. 3. The yellowish tint, which the nucleus of the lens so frequently acquires about and after the middle period of life, is quite independent of any opacity, although the hue may increase in depth if a cataract does form. The lens, when it acquires this amber colour, generally looks more or less greenish in the living eye, and is then apt to throw back upon the bottom of the globe a reflected image which may be mistaken for an incipient cataract by the inexperienced oculist.

More than one paper has been recently published on the treatment of cataract without surgical operation; but certainly nothing satisfactory has been made out by many of the writers. M. *Guépin* has been trying the effects of inserting a seton in the temple, not only in the human subject, but also in the horse, an animal which is very subject to cataract.

There seems moreover to be still greater discrepancy of opinion as to the relative advantages of couching and of extracting in cataract. M. *Furnari* says that he believes that the latter operation will ere long be abandoned, except in a few exceptional cases, while M. *Guépin* on the contrary mentions that as a general rule, extraction is greatly to be preferred to its rival.

It often happens in old persons that, after the extraction of a cataract, the cornea falls in somewhat, and exhibits a depressed in place of a convex surface.

However well the operation may have been performed, the patient is unable to see, if this accident takes place. Professor *Maunoir* of Geneva has adopted with success the following expedient to obviate the evil in two or three cases. "Let the patient lie down," says he, "on his back, with his head laid as low as his body, and then let the surgeon pour gently some tepid distilled water over all the exterior part of the orbital vault, so that the globe of the eye and the lids are completely covered with it. When this is done, let him raise the flap of the cornea (the incision in many cases has been made in the upper half), and the water will enter the anterior chamber of the eye, and fill out the cornea so that it regains its normal convexity, and the patient can distinguish objects before him."

M. *Pirondi* in Italy and M. *Sichel* in France have, during the last two years, been endeavouring to revive the operation of extracting the cataract, by making the wound in the sclerotic coat instead of in the cornea. The latter surgeon advises the incision to be transverse, or in the direction of the fibres of the abductor muscle, and not vertically, as it has usually been made in sclerotomy.

*Amaurosis.*

Several well-written memoirs on this disease have appeared during the course of last year. One of the best is from the pen of M. *Petrequin*, of Lyons, who is favourably known to the profession as a most intelligent and zealous practitioner. There is nothing novel in his observations; nothing that has not been said before; and yet there is a good deal of sound practical instruction to be derived from the perusal of his work. While he agrees with all the best oculists that the cause of amaurosis is very different in different cases—in some being dependent upon an hyperæmia or congested state of the vessels of the retina or choroid coat, in others on an atony or paralysis of the former, and in a third set on sympathy with intestinal derangements—he candidly admits that it is often no easy thing to diagnosticate with accuracy the real cause in individual cases. The remedies, to which he chiefly trusts, are local antiphlogistics, the external application of nux vomica—either rubbed on the eyelids and temples, in the form of tincture, or sprinkled upon a blistered surface—belladonna, &c.; and the internal use of mercurials and other intestinal derivatives.

M. *Petrequin* makes a very useful practical remark that ought to be well attended to. In a number of incipient cases of amaurosis, he says, the patient, finding that his sight becomes much shorter than it had been before, at once, and without further ado, has recourse to the use of magnifying glasses. The use of these necessarily aggravates the weakness; and just in proportion as the strength of the glasses is raised, so is the weakness of the vision increased. If on the contrary, the weak eye was allowed to rest, and was not overstrained, the amaurosis might be in many a case prevented.

M. *Sichel* informs us, as one of the results of his observations, that a good many cases of amaurosis, of apparently the most asthenic character, may be produced or accompanied by a local irritation, or even an inflammatory state, of the retina. He alludes particularly to a form of amaurotic blindness which is occasionally met with in cases of obstinate chlorosis. Along with the internal use of aloetic and steel medicines, it may be necessary to have recourse to cupping, blistering and the local application of strychnine.

M. *Maunoir*, of Geneva, relates a case of amaurosis in which the cure seemed to be effected by the use, for some time, of the following pills:—Extract of arnica ʒij. and sulphate of strychnine 12 grains, to be divided into 144 pills, of which one at first—to be gradually increased to five—was taken night and morning. The latter dose induced muscular twitchings in the back and limbs, like electrical shocks, as well as a good deal of gastric disturbance.

In another case, very decided benefit was derived from dropping into the eye, night and morning, an infusion of capsicum—beginning with three and raising the dose gradually to 30 grains in an ounce of water,—after a host of remedial means had been tried in vain.

Some interesting cases of *hemeralopia*, or nocturnal amaurosis, are recorded in the American Journal of Medical Sciences. In some of them the persons became totally blind at night, and the pupil then was found to be dilated and scarcely to contract when a lighted candle was brought near. A cure was effected by adopting a very simple expedient—viz. giving the eyes entire repose for one, two or three days, by the patients remaining in a darkened room. There had been, no doubt exhaustion of the nervous energy of the retina, induced by an over-bright light during the day, and it only required rest and sleep, so to speak, to recover its former powers.

MM. *Fleury* and *Frechier* have given a description of an epidemic hemeralopia. The latter gentleman, in the Bulletin de Therapeutique says: "In the month of March of last year, this strange malady was observed in the district of Maussane. Although pregnant women seemed to be most affected with it, yet no age nor sex was spared.

The degree of blindness differed much in different individuals. In some it

amounted to only a weakness of sight coming on after sunset; while others became almost entirely blind as night advanced, although their sight had been perfectly good during the day; in a few instances the eyes continued very weak even during the day."

#### *Strabismus.*

Every one has heard the French proverb—"there is nothing so new as that which is forgot." Most true this is in a multitude of cases; and not the least remarkably so of many alleged discoveries of modern surgery. It is now found that the operation of dividing one or more of the muscles of the eye for the cure of squinting is upwards of a century old.

An itinerant Englishman, of the name of *Taylor*, who called himself oculist to King George the 2nd, published in Paris, as far back as the year 1738, a pamphlet *De verâ causâ Strabismi*, in which he gave an account of his operations.

Eighteen years later, in 1756, a German surgeon, of the name of *Heuerman*, published at Leipsic a work entitled "*Abhandlung der neuesten Chirurgische Operationen*," or a Treatise on the newest Surgical Operations. In it we find the following passage, which clearly establishes *Taylor's* claims.

..... "*Taylor* has also proposed to cure squinting by the division of the tendon of the superior oblique muscle of the eye. But this deformity is not in every case produced by the contraction of this muscle: and moreover the inferior oblique muscle is apt to draw the ball of the eye in the opposite direction when the superior one is divided; thus giving rise to a new sort of squinting. In addition to this, the recti muscles, the contraction of which often occasions squinting, cannot be easily cut across, in consequence of their situation. We thus see that the operation performed by *Taylor* can be only of temporary benefit; and we cannot expect that patients will submit to it, seeing that it is attended with a good deal of pain, and its results are so uncertain."

Well would it be if some of our hasty contemporaries spoke and wrote as rationally as this old German.

*M. Boinet*, in a well-written article in the *Journal des Connoiss-Medico-Chirurg*, examines the claims of different surgeons of the present day to the merit of having introduced—or, shall we say, revived?—tenotomy for the cure of strabismus. While he admits that *M. Stromeyer* of Hanover first recommended, and *M. Dieffenbach* of Berlin first executed, at least with success, the operation in question, he argues with much ability in favour of the superior claims of his countryman, *M. Guerin*; as it was he who had previously established the safety and successful results of myotomy and tenotomy in the treatment of various other deformities. This will appear from the following extract from one of his earliest memoirs, the date of which undoubtedly preceded the proposal of *M. Stromeyer*..... "As retraction may effect all the muscles of the economy, we may, by a most logical deduction, extend the operation of tenotomy to every tendon and muscle which occasions any impediment to the normal position of the organs, and instead of limiting it to one or two tendons only, as has hitherto been done, we may lay down a general therapeutic rule for all cases that can occur in practice." Is there not here the *idée-mère*, so to speak, of all that has been done within the last few years in the treatment of strabismus?

The merit of *Stromeyer* and *Dieffenbach* is much about the same as that of the surgeon who may have been the first to apply a ligature to a particular artery for the cure of an aneurism, after the general rules of the operation in such cases had been established by *Anel* and *Hunter*.

There has been a keen dispute between *M. Dieffenbach* and *M. Cusnier*, of Brussels, and their friends, as to which of these gentlemen first put *M. Stromeyer's* proposal into actual practice on the living subject. There is so much discrepancy of statement—proh pudor!—that it is impossible to decide the

question. But this is not all; the good faith of some of the Strabotomists—what a word!—has been publicly questioned; they have been accused of wilfully making inaccurate statements as to their success.

A well-written Essay in Latin has recently appeared at Copenhagen, from the pen of M. *Melchior*. In it he states, that having, like other surgeons, been surprised at the alleged marvellously uniform success of *Dieffenbach's* operations, he went to Berlin with the express object of judging of the truth of the published statements for himself. Of 44 patients, whom he saw operated upon, 10 were perfectly cured, 15 were much benefitted, 9 were triflingly so, and in the remaining 10 the deformity was either quite unaffected or really worse than it had been before the operation. He learned, moreover, that in some of the cases which were successful at first, the squinting returned afterwards; while in other cases the eyeball became so abnormally prominent that one species of deformity seemed only to be substituted for another.

It seems therefore, that the criticism which M. *Cunier* passed upon the report of *Dieffenbach's* operations, published by M. *Phillips*, is amply borne out by facts. In that criticism he said—"The reporter is in perfect ecstasies at the brilliant results of the operation. The chapter devoted to the history of ocular contorsion may be summed up in these few words:—A squint being given, divide the muscle on the affected side, and *crack!* . . . the eye at once resumes its normal position."

M. *Baudens* has recently discovered a new species of this deformity which, he says, has hitherto never been described!

It must surely be a rare phenomenon; for he tells us that out of 800 cases on which he has operated, he has met with the new species only once. The two eyeballs, he says, are drawn so strongly outwards that two-thirds of the pupil are concealed under the external orbital angle of the lids; and they cannot by any voluntary effort be brought towards the centre of the orbit. He calls it the *double divergent fixed squint*. M. *Cunier* had previously described it accurately; it belongs to that variety which this experienced oculist has termed *anchylosed*. It is not so rare as M. *Baudens* imagines.

M. *Guerin*, in his memoir read at the Academy of Sciences in January of last year, proposes that all cases of strabismus should be arranged in two groupes. The one form he calls the *mechanical* or the *primitive muscular*, and the other the *optical* or the *consecutive muscular* strabismus. The characters of these two forms are quite distinct; and the treatment required for each is very different. The one is susceptible of being cured, or at least greatly benefitted, by an operation; in the other it is quite inadmissible.

M. *Rognetta*, on the other hand, recognises four kinds of strabismus, according to the supposed cause of the deformity. This, according to him, may be 1, either a congenital or an accidental inequality in the force of the two retinæ; 2, an inequality and want of harmony in the force of the muscles of the eyeball; 3, a mechanical deviation of the visual axis; 4, or a vicious habit derived, perhaps, from imitating persons who do squint.

M. *Cunier*, and subsequently several other writers, have clearly established the fact that not a few cases of strabismus are unquestionably attributable to previous ophthalmia, more especially to the scrophulous and rheumatic varieties of the disease.

#### *Various Applications of Ocular Myotomy.*

*Myopia*.—M. *Guerin* was the first to propose the operation in this case. "There are," says he, "two species of myopia as there are two species of strabismus: the one is mechanical or muscular, the other is optic or ocular. The mechanical myopia, like the mechanical strabismus, is the result of the primitive shortness or of the active retraction of the muscles of the eyeball. In M. *Guerin's* opinion, the muscles that are too short, are either all, or two or three at least of, the recti

muscles. The contraction must, it will be obvious, be nearly to the same degree in all the affected muscles: otherwise the defect produced would be squinting and not short-sightedness. M. Cunier has taken the same view of the question as M. Guerin, and he has effected in several cases a cure by dividing the internal and external recti muscles at the same time.

Dr. Kuh of Breslaw, in one case, divided all the four recti muscles, and obtained, we are told, "un resultat satisfaisant." (!) This gentleman seems to think that M. Phillips of Leige is surely mistaken when he alleges that he has cured myopia by dividing the superior oblique muscle alone; such an operation would, in his opinion, rather aggravate than mend the defect. On the other hand, M. Bonnet gives it as his opinion that this imperfection of vision is owing to a contracted state of the inferior oblique, and he consequently recommends the section of this muscle.\*

M. Cunier has adopted this recommendation in six cases; and what has been the result?—in one case only, the operation was successful; in the other five the short-sightedness seemed to be left worse than it had been before. In four of these unsuccessful cases, he afterwards divided the internal and external recti muscles, and effected a cure of the myopia in three of them; in the fourth case, the operation produced no decided effect. To make amends for this, we find that in one case, where the external and internal recti had been divided without success, the subsequent division of the inferior oblique was followed by a cure!! Well; this is strange work; the poor eyeball is worse treated—to recur to our former illustration—than any rickety old water-logged coal-brig, whose masts and stays were all leaning over to one side. Would Jack go about nicking with his knife every rope that he found to be rather *taught*? such a bright idea is fit only, we suppose, for the horse-marines.

We quite agree with our brother critic, that "all that is hitherto known as to the indications of myotomy is very incomplete, and that *much* yet remains to be done before we can satisfactorily point out the conditions in which the operation is advisable:"—*very much* indeed.

*Amaurosis*.—It may, on first consideration, appear strange that any one should propose to treat the "drop sereno" by dividing any of the muscles of the eye; and M. Heussu of Gand is perhaps quite correct in asserting that several of the

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\* So much for the *science* of modern surgery. One man divides two of the recti; another all the four; a third leaves these muscles alone, but he divides the superior oblique; and, lastly, a fourth, in order to make things even we suppose, divides the inferior one.

And yet with such things before our eyes, we are told that surgery has made brilliant advances within the last few years. If she has, it must surely be by one step forward and two backward. There would be no lack, we guess, of material for the gibes and jeers of a second *Moliere* in the present day. What with slicing the tongue in a variety of ways for the cure of unfortunate stammerers, and dividing the muscles of the eye for all sorts of visual defects, not to mention the cure of spinal deformities by deliberately cutting across all the contracted muscles of one side of the back, a "pretty considerable tarnation" bit of satire might be worked out, we calculate.

Has it never occurred to any of the bistoury maniacs of the present day that any painful injury of a weak or irregularly-acting muscular organ may, for a time at least, excite it not only to a more energetic but also to a more normal state of action? and therefore that the apparent cure of stammering, amaurosis, &c. is merely a temporary illusion. Until surgeons have accustomed themselves to watch cases, in which operations have been performed, for a length of time afterwards, we cannot expect a better state of things.—*Rev.*

cases, which have been recorded as instances of success, were in truth cases not of genuine amaurosis, but either of a nervous condition of the muscles themselves, giving rise to a confusion of sight and an incapability of keeping the eye fixed on any object, or to a partial palsy of the third pair of nerves. The following remarks by M. *Petrequin* seems so just as to deserve attention.

"The theory of analogues," says he, "led us to anticipate, and the results of strabotomy have distinctly proved, that the motory apparatus of the eye exercises a marked influence on the functions of its nerves. From what I have observed in several squinting persons, I have been induced to believe that certain cases of amaurosis are primarily owing to a spasmodic or irregularly-acting condition of one or more of the muscles of the eyeball. In strabismus the existence of a muscular spasm is now recognized by surgeons as an acknowledged fact; and it is not the less true that, in the majority of cases of this deformity, there exists a more or less distinctly marked feebleness of vision, more especially on the side on which the deviation is the most considerable. Now I have had occasion to observe that this visual asthenia—whether it be primary or consecutive in its origin is not here the question—generally yields to the section of the contracted muscle or muscles, especially if recourse be had after the operation to due exercise of the eyes (*à la gymnastique orthophtalmique*.) Myotomy may therefore become a truly heroic remedy for amaurosis arising from this cause; and the important question now is, what are the cases in which it should be performed." M. *Petrequin* says that he has already obtained success in several cases by adopting this line of treatment. As yet he has recorded two of these only.

In one, a youth 18 years of age, there was a partial amaurosis of the left eye, which could not be traced to any of the usual causes of this disease. It was observed, however, that in certain movements of the eye there was a tendency to the ball turning inwards. M. P., on the belief that a spasmodic state of the ocular muscles had a decided influence on the vision, resorted to the section of the two (?) internal recti. The sight of the left eye became immediately improved; the improvement continued; and in the course of five weeks it was quite as good as that of the right.

The other case was very similar; the sight of the left eye had nearly quite gone, without any appreciable cause; but as it was observed that the eyeball had an occasional tendency to being drawn inwards, the operation of myotomy was performed; and an immediate improvement of the sight, we are told, was the result.

M. *Petrequin* has also of late been trying the effects of dividing some of the muscles of the eyeball in what he calls *Kopyopia*—i. e. the disposition to fatigue of vision. After stating the results of some operations performed by M. *Bonnet* and himself to show that this defect of the sight may yield to division of the recti muscles or of the inferior oblique, he proceeds to say, "M. *Bonnet* seems to attribute the complaint to some fault in the oblique muscles, whereas in my opinion it is rather the recti that are at fault: the truth is—and this is the important point—that both the one and the other set of muscles have much to do with the complaint in question." M. *Bonnet* recommends the same operation for *kopyopia* that he does for myopia—the section of the inferior oblique at its anterior orbital insertion. For this purpose he introduces, by a puncture previously made in the lower eyelid, a blunt *tenotome*, the point of which he directs backwards and inwards along the line of the floor of the orbit. When it has been passed to the depth of three centimetres, it is then to be carried somewhat forward so that it may be felt under the skin. The anterior insertion of the inferior oblique may then be hooked and divided.

#### *Abnormal Prominence of the Eyeball after Myotomy.*

M. *Cunier* has written more than one paper on this occasional and very unpleasant consequence of dividing one or more of the muscles of the eye. He



says:—"The plan recommended for the relief of this condition by MM. *Rognette, Guerin, and Baudens*, consists in attaching, by means of two or three stitches, the inner angle of the lower lid to the corresponding point of the upper one, the operator having first removed with curved scissors a crescentic fold of the integuments. But this operation does not diminish the projection of the eyeball: it only disguises it by inducing a sort of epicanthus. The tension of the eyelids necessarily impedes their free play; and the lachrymal puncta become dragged and compressed, so that the course of the tears is apt to be more or less obstructed. (Such an operation seems certainly a very clumsy and unworkmanlike act to remedy a deformity.—*Rev.*)

What I (M. *Cunier*) propose acts at once on the projecting eyeball, and is moreover not liable to the objections now mentioned. By means of two *crochets-à-earnes*, I seize a vertical fold between the cicatrix and the caruncle, and exercise it with a pair of curved scissors. If the fibrous membrane has not been included in the excised fold, I lift it up with forceps and divide it with one stroke of the scissors. The edges of the wound are then brought and kept together by means of two sutures passed through the conjunctiva and the fibrous membrane. The loss of substance in the conjunctiva and the subjacent membrane induces a shortening and a close adhesion of them with the ball, so that this will no longer retain its abnormal prominence; and at the same time the caruncula, which may have become more or less displaced, regains its natural situation."

M. *Guerin* has not been behind hand in this matter; he also has his *plan de combattre la saillie, la deviation et la perte du mouvement des yeux, consecutives à l'operation du strabisme*. (Is not this a sorry proof of the wonderful cures of squinting that we have heard so much about the last year or two?) M. *Dieffenbach*, too, has been writing on the same subject. His operation, we believe, consists in applying one or two sutures to the conjunctiva of the eye, at the seat of the wound made for the section of the internus muscle.—*Encyclographie des Sciences Medicales*.

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#### SURGICAL TREATMENT OF STAMMERING WELL KNOWN TO THE ANCIENTS.

Poor moderns!—nothing soon will be left to them to make a boast of. Their astonishingly grand discovery of curing squinting in less than a minute by a surgical operation—vaunted as one of the greatest acquisitions of the present century—is discovered to have been perfectly well known a hundred years ago; and alas! too, the kindred operation for the cure of stammering is now shown, by the very impertinent researches of M. *Joubert*, to have been in common use even before the time of the witty *Rabelais*. Pity it is that this jester of jests did not live in the nineteenth century to record all the marvels that he might have met with in his travels at home and abroad. What a merry tale he might tell of the deeds of the doctors—how a man with a squint of his eye one way went to a surgeon, and how the surgeon performed a wonderful cure; and how the eye then squinted the other way; and how the surgeon again cured this by a second operation; and how the eye afterwards stood out like a lobster's, and how a third time the doctor did something . . . . . and how this same patient stammered in his speech, and what the doctor said he would do to cure him of this also; and how he *did* for him at last, &c. &c.

M. *Bourguery*, in giving an account of M. *Joubert's* historical researches on the subject of stammering, employs this very decided language:—"From these researches it is quite obvious that, under all aspects as to the etiology, the anat-

mical conditions of the tongue, the operation required, the accidents that may ensue, the chances of relapse, &c. nothing of what we only now begin to know about stammering, was unknown to the ancient authors; the same hopes have induced the same attempts, these attempts being followed by the same disappointments; so that in short the subject, apparently so novel in the present day, has been truly nothing but a mere resuscitation of antiquarian knowledge. It would seem that what one age was perfectly well acquainted with, is like a shut book to the succeeding one; and thus, alas! man moves forwards and backwards, one step now in advance, then a step in a retrograde direction, so that at length he has made just about as much progress in the right road as his forefathers some centuries past."

We shall now briefly mention some examples to prove this point.

*Galen*, in numerous passages of his writings, alludes to various circumstances connected with stammering, especially to the irregularities in the length, thickness, movements, &c. of the tongue itself, which may give rise to this defect of speech. He suggests a variety of means of relief; and among the rest the use of the cautery: but he makes no allusion to any cutting operation.

Nearly four centuries later, *Ætius* has given a very minute description of stammering, the cause that give rise to it, the best mode of relief, &c. The following passage will enable the reader to judge for himself how well acquainted this writer seems to have been with many of the discoveries of modern surgery:

*"De ancylloglossis \* et qui vix loqui possunt."*

Of stammerers, some are so from their birth, and others in consequence of disease. In the former, the inferior membranes, by which the tongue is attached, are naturally hard and contracted; while in the latter the incurvation of the tongue, in consequence of disease, is the effect of a cicatrix<sup>†</sup> from a previous ulceration of the lower surface of the organ.

Persons affected in this manner speak with difficulty, and were thence called by the Greeks *Mogilali* (μογολι αἰσῦμνα, et λαλῶ loquor). Those, who stammer from their birth, usually hesitate at first for some time before they commence speaking; but, when the impediment is once overcome, they go on with tolerable volubility: if, however, in the pronunciation of certain syllables, especially when the letters *l* and *k*, or *r* occur frequently, they continue to experience more or less difficulty, a cure cannot be effected without the aid of surgery.

While the tongue is kept up, the membrane, which binds and confines it down, must be divided either with scissors or a scalpel. If an old cicatrix be the cause of the infirmity, this also must be freely divided. The wound should be prevented from uniting, by keeping the edges separated as much as possible until the process of healing is completed."

*Paulus Ægineta* is not less particular in describing stammering:

"The stricture or binding down (*ligatio*) of the tongue, which the Greeks call *ancyl-glossa*, sometimes occurs naturally, and is then owing to the induration and contraction of the membranes which confine it; at other times it results from a cicatrix following an ulceration of the part. In the former case, the person is observed to make every effort in his power to begin speaking, at the same time that the tension under the tongue becomes more obvious. Those, on the contrary, in whom the infirmity has been accidental, will be found to present a cicatrix under the tongue more or less distinct. In the former case—i. e. when the complaint is congenital—the operation for its relief is simple: the tongue should be kept well up towards the palate, and then the confining membrane be freely cut across. When, however, it has arisen from the induration and con-

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\* From *αγκυλος* curvus, and *γλῶσσα* lingua.

traction of a cicatrix, something more must be done: the callosity should first be transfixed with a sharp hook, so that the tongue can be drawn well forwards, and then a double lateral incision should be made, so as to free the confinement of the organ, taking care, however, not to make the incisions too deep, as there is considerable risk of a troublesome hæmorrhage supervening."

It is rather a curious circumstance that we do not meet with any notice of impediments of speech again for several centuries after the period of *Paulus Ægineta*; and then the allusion is found in the merry tales of *Rabelais*. His story of the husband, who, having married a wife that could not speak freely, had recourse to a surgeon to cure her, clearly refers to some cutting operation; for we are told: "Le bon mari voulait qu'elle parlât. Elle parla par l'art du medecin et du chirurgien qui lui coupèrent une *ancyloglotte* qu'elle avait sous la langue."

The good gentleman soon had occasion, we are told, to regret his haste; for his spouse became so loquacious that he returned to the doctor soon after "pour remede de la faire taire."

Less than a century after the time of *Rabelais*,—the beginning of the 15th—we find *Fabrizius Hildanus* describing an operation for the cure of stammering and other defects of speech.

It consists in merely snipping the sublingual ligament in several places to give it greater freedom of movement, and in preventing the quick healing of the wounds by moving the tongue about and smearing them with rose-honey, &c.

*Dionis* (1672) alludes to it in the following passage: "we often see children who stammer at the age of four or five years, because the tongue cannot move about with sufficient freedom to enable them to articulate distinctly. To relieve this state of things, we have only to make two or three small cuts with scissors at different points, so as to allow the tongue greater facility of motion."

The author too of the article *Ancyloglossum* in the *Dictionnaire Universel de Medecine*, published in the course of last century, after citing and commenting upon the writings of most of his predecessors on the subject, gives a minute description of the operation which he recommends. "With the left hand covered with a napkin, or, if this be not sufficient, by means of a particular sort of forceps, the tip of the tongue should be lifted up, and the frænum may then be snipped in several places with a pair of button-pointed scissors. The surgeon may also on some occasions make use of a bistoury, to divide the tissues between the ranular veins and the salivary ducts; but in doing this, great caution is necessary to avoid wounding either set of vessels, as the consequences may be very distressing."

From all these statements it clearly appears that the operation of dividing the sublingual membranes for the relief of certain impediments of speech was quite generally known for several centuries before the commencement of the present; and it now only seems surprising that it should have so entirely fallen into desuetude, until revived within the last year or two—when several of our contemporaries have actually been disputing among themselves as to their respective claims of its discovery!

However we may disapprove of the method which he recommends, it was unquestionably *M. Dieffenbach* who was the first among them to propose and perform a surgical operation for the cure of stammering, upon its recent resuscitation.

"Before the month of February, 1841," says *M. Bourguery*, "no one dreamed of operating upon stammerers, and the public and the profession were engaged solely by the physiological methods of treatment recommended by *Madame Leigh, MM. Malbouche, Colombat, and Isere*. The latter gentleman did occasionally snip the frænum lingue, when this membrane appeared to be unusually tight. It was on the 1st of April that the *Journal des Debats* announced *M. Dieffenbach's* first operation in these words. 'This distinguished surgeon has found out a method of curing stammering by making an incision in the tongue: the operation has

succeeded perfectly. His opinion is that stammering is attributable to the confinement of the tongue so that it cannot be applied to the palate; the operation consists in correcting this state of things.' This announcement created a great sensation among the surgeons of Paris. *M. Dieffenbach* having not at this time made public his method of operating, every one immediately set himself to devise one for the purpose. If we can believe *M. Phillips*, who has made himself the historian of this period, he operated upon two patients on the 6th of February, and next day he addressed a letter to the Academy. He it was, we believe, who had the good sense first to transfer the cutting operation from the upper or dorsal to the inferior or sublingual part of the tongue. On the 14th of the month the cases of *MM. Velpeau* and *Amussat* occurred; and in the course of this and the following months many other surgeons engaged in the same inquiry. From this period the surgical operation for the cure of stammering *put commencer à entrer dans l'enseignement*. (Indeed; we very much doubt it.) It seems now very generally admitted that *Dieffenbach's* method is utterly inadmissible, and ought decidedly to be expunged from surgery. If anything is ever to be attempted with the knife, it must be in the sublingual region—thus showing, as often happens in medicine, that we unwittingly return to the forgotten acts of our predecessors, while we fondly imagine that we have been making some original discovery."—*Gazette Medicale*.

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#### OBLIQUITY OF THE NOSE CURED BY OPERATION.

*M. Dieffenbach*—who seems determined that no deformity of limb or body should perversely resist the magic of the knife—has been trying of late his orthopædic skill on two young men, whose noses had got awry, and had become turned to one side. In one of the cases the obliquity of the nasal member was congenital; in the other the calamity had been caused by a fall upon this awkwardly jutting-out promontory of the human face divine. In both of the unfortunates the deformity, we are candidly informed, was "*des plus choquantes*;" the nose no longer, as in duty bound, appeared to be in the middle of the face; but it was completely thrown outwards and lay all *couchant* on the cheek, one nostril being directed upwards and the other downwards.

A small bistoury was slipped under the skin of the side of the *ala nasi*, just at the place where the cartilage joins the bone of the nose, and it was then turned so as to divide the point of union of the nose with the bones on each side—all this, be it remembered, was done *more subcutaneo*, the integuments remaining unwounded except where the bistoury, was introduced. The "*falling tower*" of *Naso*, being thus loosened at its foundations, could easily be propped up erect; and all that there was then necessary to do was to secure it in its new and honourable position. The surgical architect, we are told, was eminently successful in every step of the proceeding; and so satisfactory were the results that no one could suspect that the building had ever been in fault at all.—*Caspar's Wochenschrift*.

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#### M. STROMEYER ON SPASM OF THE THUMB IN WRITING.

The celebrated Hanoverian surgeon *M. Stromeyer*, Professor of Surgery in the University of Erlangen, has published the reports of two cases of this very troublesome complaint, in which he tried the effect of dividing certain muscles of the affected thumb.

Before narrating these, we wish to allude to a few circumstances connected

with what has been called by some "the writers' cramp" as it would seem that more than one morbid state of the digital muscles or tendons is included under this appellation. In the Medico-Chirurgical Review for April, 1840, will be found a short notice of several cases, from one of the German Journals, of spasmodic tremor of the fingers in writing, the tremor in some instances extending up the fore-arm and arm, and accompanied with a greater or less degree of pain. In M. *Stromeyer's* cases it seems that the thumb was almost exclusively affected; while in those related by Professor *Langenbeck* of Göttingen, in a recent number of the *Allgemeine Zeitung für Chirurgie*, &c. the affection appears to have consisted chiefly in a spasmodic contraction of one or more of the external muscles of the forefinger. In one case, he divided the common and proper extensors of this finger, immediately below the point where the former muscle sends off a communicating slip to the tendon of the middle finger; but the result was any thing but fortunate; and we understand that in two other similar cases still worse consequences ensued. We shall find that M. *Stromeyer* was more fortunate, at least in one of the following cases.

*Case 1.*—A gentleman, 32 years of age and of a delicate constitution, had for two years been afflicted with what has been called the *writer's cramp* (*spasmus habitus flexoris pollicis longi*). It had become so distressing that he was quite disabled from writing with his right hand; all that he could do was merely to scribble a few almost illegible words; and often before he could do even this, a convulsive movement of the thumb came on, jerking the pen fairly from between his fingers and scattering the ink about. And yet, strange to say, he could use his right hand for doing any thing else without difficulty or inconvenience. While the patient was writing, it was obvious that the muscles of the thenar eminence were unusually rigid—a circumstance which naturally suggested the idea that these muscles were the seat of spasm. As every thing that could be thought of had already been ineffectually tried to relieve this most distressing affection, M. *Stromeyer* determined to divide the small muscles of the thumb, avoiding any injury to the tendon of the long flexor. The operation had certainly no good effect; for the spasm continued as bad as ever, and to this there was unfortunately added a loss of sensation in the palmar face of the thumb. M. *Stromeyer* was now convinced that the action of writing was dependent upon the long flexor of the thumb, and he wished to divide it; but the patient refused to submit.

*Case 2.*—A schoolmaster, 45 years old, robust and plethoric, has for nearly fifteen years been affected with the *writer's cramp*, which prevents him not only from writing but also from playing on musical instruments. When he attempts to write, he is obliged to steady the thumb of the right hand with the thumb and forefinger of his left one, and, even with this assistance, he cannot do more than write a few lines at most. When he touches the notes of a piano, the thumb is immediately drawn in towards the palm of the hand, and the second phalanx is powerfully flexed. And yet this patient can use his right hand in all other manual exercises without trouble or unusual fatigue. During the efforts to write, there is no apparent rigidity of the small muscles of the thenar eminence, as was observed in the preceding case. This circumstance, added to the *brusque* flexion of the second phalanx in playing upon the piano, induced M. *Stromeyer* to try the section of the long flexor muscle of the affected thumb;—although this muscle did not seem to be at all contracted, nor to impede in any way the free movements of the thumb. The deep seat of the muscle made the operation somewhat difficult to divide it alone and without injury to any other parts. The patient being made to bend as strongly as he could the first phalanx of the thumb, at the same time that it was forcibly drawn outwards, M. *Stromeyer* inserted, about the middle of this phalanx, a narrow curved *tenotome* at the side of the tendon,

down to the bone; the point of the instrument was passed under the tendon, and this was divided at a single stroke by moving the hand "en bascule." When the instrument was withdrawn, the sensibility of the thumb was found to be much impaired; the dorsal surface recovered it on the first, and the palmar surface on the fourth day after the operation: upon the latter day the power also of moving the second phalanx returned. On the 15th day the patient made an attempt to write and to play on the piano: he did not experience the slightest cramp, and found that he could do both acts with the greatest ease.

Experience alone can determine whether the simple section of the long flexor of the thumb will be found sufficient for the cure of this most distressing complaint, or whether it will not be sometimes necessary to divide any other muscles likewise.

M. Stromeyer dwells at considerable length on the influence which division of the muscle of a limb exercises upon its sensibility. This influence is the more decided in proportion as the muscles are more powerful and active. Hence it is usually very marked in cases of accidental rupture of the tendo-achillis in robust persons; the limb becomes almost quite insensible, and this loss of sensation continues more or less until the two ends of the divided tendon become united. The return of sensibility is usually indicated by a feeling of pricking or creeping in the part. When the muscles to be divided are considerably wasted and have lost much of their energy, the loss of sensation is generally much less considerable. These phenomena are especially remarkable after the section of the digital tendons: the loss of sensibility is usually very decided: it is sometimes however limited to the palmar surface when the flexors alone are divided. The sensibility usually returns—but in most cases not till then—with the returning motility of the member. It is very questionable whether this loss of sensation is dependent upon the division of any nervous filaments; if it were so would it cease so soon as we observe it to do! Genuine paralysis from section of a nerve does not cease so rapidly. It is certainly not easy to explain the circumstances; and it may be wise therefore at present to state the fact, without endeavouring to explain it.—*Bayerisches Med. Corresp. Blatt.*

*Remarks.*—Although we readily acknowledge that it is no easy thing to suggest a remedy for the peculiar spasmodic affection of the fingers alluded to in the preceding remarks, we should feel very unwilling to recommend a cutting operation, with the view of dividing any of the tendons or muscles which seem to be chiefly affected, except indeed in an extreme case, where the mischief was confined exclusively to one tendon, and provided also every other rational means of relief had been found ineffectual. Does it not seem that the convulsive action of the fingers in the *writers' cramp* is nearly of the same nature as the irregular and truly convulsive movements of the tongue in most cases of stammering!—perhaps indeed the appellation of *stammering of the fingers* expresses the nature of the complaint in question better than any other. The muscles of both parts are thrown into vibratory and—if we may coin a word—*dis-sentaneous* contractions in the attempts to perform certain voluntary actions, and in these only; and thus, instead of the harmonious co-operation of all in one direction, certain muscles become affected with violent spasm, while the others are more or less quiescent. All know that most stammerers can articulate their words with sufficient distinctness and facility in singing, and also that the impediment of speech is greatly less while reciting a passage from a foreign language than when conversing in their mother tongue. Whenever in short the person is obliged to perform the acts of inspiration and expiration with greater regularity than usual, and especially if his attention is withdrawn at the same time from the remembrance of his infirmity, he will find that his stammering is infinitely less than under opposite circumstances. Well, and so it is in a great measure with the peculiar affection of the thumb and fingers, which some persons experience in

writing. There is nothing positively altered or diseased in the state of any of the digital muscles or tendons; far from it; the spasm, with which they are apt to be seized, is only occasional, and moreover it may be made to cease in a moment, by merely discontinuing the attempt to write. In some cases, the person continues able to use the hand with the greatest dexterity in playing upon a musical instrument or in any other delicate work; it is only when the pen is taken into the hand that the cramp or spasm comes on. But whether this be the case or not, no difficulty or distress is experienced in using the hand in ruder and rougher occupations—as for example in boxing, rowing, dressing, and so forth. Now have we not seen that the case of the stammerer is very much alike?—he can sing, nay, often can recite long passages from Latin, or any other language whose syllables are deep-toned and sonorous, without difficulty; and yet, when he attempts to speak a few words in his mother-tongue, he is at once seized with the most distressing spasms. The two cases are therefore very strikingly parallel; and the treatment therefore of both should surely be managed on somewhat similar principles—viz. by withdrawing, as much as possible, the attention from the affected part, and by disciplining it to perform slow and regularly-repeated movements. In both cases—although as a matter of course the precept is of much more importance to him who stammers with his tongue than to him who stammers with his fingers—the patient should be directed to avoid all hasty movements; and one of the best rules of all with this view, is to regulate the breathing, so that the acts of inspirations and expirations are even and well sustained. Whenever the breathing is performed, so to speak, slovenly—we mean, now deep and long, now short and hurried, now at regular and then at irregular intervals—every person, however robust he may be, will find that he is more or less nervous, easily thrown off his guard, and apt to be more than usually excited or depressed.

To allude at greater length here to the treatment of stammering would be entirely out of place. Suffice it to say, that no surgical operation is necessary in one out of a hundred cases. If there be a manifest shortness or rigidity of the frænum, we should never hesitate to snip it across, that the tongue might have greater freedom of movement; but even this is very rarely necessary. The infirmity may generally be got rid of, or at least very greatly relieved, by proper discipline of the voice and breathing; without slicing the tongue, as *M. Dieffenbach* recommends, or snipping off the tonsils, as *Mr. Yearsley* is, or was, in the habit of doing with such marvellous success!

By-the-bye, this scientific gentleman should be on his guard, or else he will soon gain for himself the reputation of a thorough quack. We recently saw a youth on whom he had operated without the slightest benefit, but who was subsequently cured of his stammering in the course of two or three days by *Mr. Hunt*, whom we have heard favourably spoken of on several occasions, and who, we are glad to observe, is patronised by several distinguished members of the profession.

But to return to the subject of spasmodic affections of the fingers, we may again remind our readers that they will find some illustrative cases, with remarks, in the number of the *Medico-Chirurgical Review* for April, 1840. We there (p. 519) expressed our opinion that we knew of no plan to relieve the distress, but that of ceasing to use the finger at the time when the affection came on, and of diverting the mind so as to withdraw the attention from the seat of suffering. We recently received an interesting letter from *Mr. Müller*, of Kilmarnock, in which he alludes to a case of this description that had occurred in his practice. He says:—"I have a patient who has for a year or two complained very similarly to *Giere's* (the second case referred to in your Journal), and one about whom I have considerable anxiety, as he is besides a highly valued personal friend. The affection, too, threatens sometimes to incapacitate him almost entirely for his profession, that of an attorney. He is of a very keen sensitive tempera-

ment, and I rather think that electioneering excitement and annoyances gave rise to the complaint. For a considerable time at first his stomach was greatly at fault, and I was disposed to blame this for the other affection: but the stomach and whole body have now got into much better tone, and the annoying tremor of the fingers in writing continues unabated. As general remedial means, his diet has been regulated, he has been put upon tonics of various kinds, has taken out-door exercise, used the cold bath, flesh-brush, &c.; while locally all manner of anodyne liniments have been tried."

Mr. Miller kindly asked us if we could suggest any means likely to remove this troublesome complaint. If we remember aright, we advised that the chief reliance must be on brisk manual exercise, such as the use of the dumb-bells, pitching a weight, pulling an oar, &c., and the cessation of writing whenever the tremor comes on—the mind being all the while kept as tranquil as possible from fidgetty fears as to the consequences, and the general health being attended to. The more anxious that the patient is in such cases, the more obstinate is the complaint likely to prove; if he can be induced to make light of it, the chances are that some morning it will take wings to itself, and flee away.

Before dismissing the subject of digital spasm, we may mention that we recently saw a well-marked case of severe spasm of the tendon of the extensor longus of the great toe. The woman was a middle-aged woman, subject to plethora of the head. The spasm of the muscle was often for several days so great that this toe was forcibly drawn up to nearly a right angle with the others, so as quite to prevent her wearing a shoe on the foot. Neither internal nor external means had any effect: the tendon was therefore divided; and the relief thus afforded has now continued for several months.—(Rev.)

#### REPORT OF VACCINATION IN FRANCE DURING 1840.

M. *Claubry* communicated to the Academy of Medicine, at the meeting held on the 26th of April last, the conclusions of the Annual Report of the Vaccination Commission of France for the year 1840. From this report it appears that the number of vaccinations performed in the different departments of France during this year has been 525,509, while the number of births was 836,789.

In two cases, which have been made known, there was a general eruption of vesicles over the body; and the lymph, taken from these vesicles, was found to communicate on inoculation a regular vaccine pock.

The epidemic variola affected 14,470 persons; of these 1,668 died, and 1,390 remained more or less disfigured and enfeebled. There were 24 instances of second attacks of variola; in three of these the disease proved fatal.

An immense majority of the vaccinated persons escaped entirely the influence of variola. Some were affected with a varioloid affection or a sort of modified variola, which was usually very mild and occasionally resembled the vaccinia. Of 406 vaccinated persons, who were affected in different degrees of severity, six only died.

Of 2,214 re-vaccinations, there were 1704 cases in which it failed; 227 in which a pseudo-pock was formed; and 270 in which perfectly normal vesicles appeared. Three re-vaccinated persons only were subsequently affected with a varioloid affection.

The following conclusions are appended to the general report:—

1. The vaccinia protects the human system from variola. This protection is however not indefinite in every case; for a certain number of vaccinated persons still remain subject to an eruption which is known by the name of the varioloid.

2. This eruption, although of a variolous nature, is usually mild and unat-  
No. 89.



tended with danger. During the year 1840, the proportion of deaths from the disease was only about one per cent.

3. A first vaccination destroys the aptitude for a second one, as it does the susceptibility to the attacks of variola. There are, however, some persons in whom this aptitude is reproduced after the lapse of a certain period, and there are likewise persons who have been affected with variola, in whom the vaccinia is developed in a regular form, without our being able to determine whether they were liable to contract a second attack of variola.

4. The most complete success of re-vaccination is not to be considered as an absolute protection against the chances of an ulterior attack of variola.

5. In general, variola attacks a person only once. There are, however, some persons who are not exempt from a second attack of the disease, and this second attack has been known to prove more severe than the first.

From the following remarks made on the preceding conclusions of the report by different members of the Academy, the reader will be enabled to judge somewhat of the prevailing opinions in France on the subject of vaccination, &c.

M. *Morreau* wished that the report should state distinctly that vaccinated persons are not preserved from variola more than those who have already had the variola once.

M. *Double* asked the reporter if he considered that the occurrence of the varioloid in an individual authorises us to infer that he has not been protected from the variola. According to his (M. *Double's*) opinion, the varioloid and the genuine variola are two diseases which are quite distinct from each other. *Rhazes* was the first to express this opinion; and subsequently *Van Swieten*, and, in our own days, M. *Rayer* have adopted it.

M. *Honore* seemed to take the same view of the case as M. *Double*. He alluded to the mistake—which, by-the-bye, is by no means uncommon—of supposing that the varioloid is merely a form of the variola modified by previous vaccination. So far from this being the case, he said, it is abundantly obvious from the writings of last century, that the varioloid was perfectly well recognized long before the introduction of vaccination; and indeed it is well known that the very difference of opinion among the older physicians, as to genuine variola ever occurring twice in the same individual, arose in a great measure from the circumstance that many authors viewed the varioloid as a disease which was quite distinct from the variola.

M. *Piorry*, on the other hand, was inclined to regard the two diseases as the same, the varioloid being merely a mild form of the variola. In all epidemics, he said, we observe cases in which the genuine variola seems to be transmitted by persons affected with the varioloid only, and *vice versa*. It is said by some that the variola is always much more dangerous. True, but the danger of the disease is attributable almost exclusively to the extension of the eruption to the larynx and trachea. (This unqualified assertion contains a grievous error. The danger of variola is owing much more to a vitiated state of the fluids of the body than to any local affection whatsoever. It is necessary on all occasions to check the localising pathology of so many of the French writers.)

M. *Barthelemy* repeated the question already put by M. *Double*, and inquired of the reporter whether it distinctly followed from the documents, which had been sent to the Academy, that genuine variola is really apt to be sometimes communicated by persons affected with the varioloid. To this question M. *Claubry* answered distinctly in the affirmative.

M. *Rayer* gave it as his opinion that the two diseases, variola and the varioloid, are owing to the same contagion—the matter of the contagion only acting in one case with more intensity than in another, or else meeting with certain individuals less predisposed than others to be affected with it.

In the course of all epidemics we have often occasion to observe that the varioloid makes its appearance in persons who already have had the variola, or

who have been vaccinated or inoculated ; but it is also developed in persons who are not placed in any of these circumstances, and who have not had either the cow-pox, or the natural or acquired small-pox.

M. *Velpeau* stated that he had met with several cases which to his mind seemed distinctly to prove that the two diseases were really the same in nature, although each had its particular shades of difference. He recently met with a case in point which occurred in a young gentleman of his acquaintance, who had been vaccinated in his infancy : after visiting a friend labouring under variola, he fell sick with it, and the eruption proved confluent ; but, at the period of suppuration of the pustules, they all flattened and, so to speak, withered away, without any purulent formation. One of the cousins of the patient caught a mild varioloid from him ; and then this last patient's mother, who had already had the small-pox, became affected with the varioloid.

M. *Bousquet*—who has paid great attention to all the questions touching the history of small-pox and cow-pox—expressed his most decided conviction that variola and varioloid are essentially the same disease. Not only do the two eruptions usually appear together at the same time and in the same places, but they evidently spring the one from the other. During the three last years, a number of small-pox and varioloid patients have been admitted into the *Hôtel Dieu* under the care of M. *Chomel*, who took especial pains to ascertain the origin of the disease in each instance ; and he ascertained in almost every one that the vaccinated persons, who were affected, had been exposed to contact with variolous patients. He also has satisfied himself that the varioloid communicates variola with all its attendant dangers to those who have not been protected by vaccination.

Direct experiments have led to nearly the same results. M. *Lafont* of Toulouse, so far back as 1818, and subsequently some other physicians, have very clearly shown that genuine variola may be communicated to an unvaccinated person by inoculation with the matter of varioloid pocks. As an additional proof that the two diseases are essentially the same, it deserves to be mentioned that an attack of the varioloid appears to afford as much, or nearly as much, protection against variola, as a previous one of variola itself. Acting upon this principle, M. *Guillon* in 1838—from being unable to obtain a supply of vaccine lymph during the prevalence of a very fatal epidemic of small-pox in Finistere—tried the effects of inoculating upwards of 600 persons with the matter taken from a varioloid eruption with which a vaccinated person happened to be affected. By singular good luck, the disease so generated had in almost every instance the characters of varioloid and not of genuine variola. M. *Bousquet* adds—but with what correctness it is not easy to say—that none of these 600 persons have been subsequently affected with variola.

"If," continued he, "I thus dissent from M. *Double* in one respect, I quite coincide with his opinion upon another—viz. that the varioloid was well known long before the discovery of vaccination, and indeed that its origin is probably coeval with that of its sister variola."

In the writings of the physicians of last and of the preceding centuries, we meet with frequent allusions to cases of difficulty, which some regarded as instances of small-pox, and others as examples of chicken-pox. The distinction by former writers of the small-pox into that which is of *long* and that which is of *short* duration, seems to correspond with the distinction now made between genuine variola and the varioloid.

With respect to the third conclusion or proposition of the report—that which has reference to the effects of re-vaccination—the following discussion took place.

M. *Moreau* said that, in his opinion, it was impossible to determine with accuracy the period at which a second vaccination will produce decided effects. He had met with the most discordant results on this point in his own practice. He stated that in his youth he had had the small-pox, and that subsequently he has

been vaccinated nearly a dozen times; and that upon three different occasions the vaccination succeeded perfectly.

M. Bousquet was greatly inclined to doubt the accuracy of M. Moreau's opinion, even in reference to the effects which he said had been three times produced by vaccination in his own person. That the vaccine virus when inserted under the skin may give rise to very decided local effects repeatedly, may be quite true; but it does not follow from this that there is a reproduction each time of the normal cow-pox vesicle; far from it. The experience of M. Bousquet has quite satisfied him that re-vaccination soon after the first operation is usually followed by only an abortive attempt to form the regular pox. It will be acknowledged to be still a very difficult matter to determine, how long the first vaccination protects the system against the contagion of small-pox, and when it usually begins to lose this preservative power.

That those, who have had small-pox, may be quite susceptible of the influence of vaccination was well known to Jenner; for he has distinctly stated that 'the cow-pox protects the system from small-pox; but there is not a reciprocity of action.'

It must be confessed that we are not warranted in the belief that the susceptibility of the system to a second vaccination is, *ipso facto*, indicative of its susceptibility to the contagion of small-pox: this subject requires much more examination than it has hitherto received, before we can arrive at any decided conclusions on the subject.

#### OXYDES OF IRON AS COUNTER-POISONS TO ARSENIC.

M. Guibert was, we believe, one of the first to determine with care how far the moist precipitated oxyde of iron might be trusted to as an antidote to arsenic. His inquiries were, on the whole, decidedly favourable to it; and the accuracy of his statements has been confirmed by the unexceptionable testimony of MM. Migel, Soubeiran, and others. Mr. D. MacLagan, of Edinburgh, has recently published a paper with a view of shewing that the oxyde precipitated from a solution of the sulphate by ammonia is considerably more efficient as an antidote than the same dose of the oxyde precipitated by caustic potash. M. Guibert, after a series of carefully-performed experiments, admits the correctness of Mr. MacLagan's assertion; the general conclusions to which he has come are these:—

That five parts of the oxyde of iron, in the state of moist hydrate,—whether this has been obtained by using caustic potash or ammonia—precipitate entirely one part of arsenious acid from its solution. If four parts only of the oxyde be used, then it will be found that the precipitation of the arsenic is still complete with the ammoniacal oxyde, but not so with that prepared with potash. It is to be observed that much larger proportions of the oxydes of iron than those now mentioned must be exhibited with the view of counteracting the effects of poisoning with arsenic in a living animal—the above remarks being applicable only when the oxyde is allowed to remain in contact with the arsenical preparation for 24 or 48 hours.

MM. Guibert and MacLagan both agree that the hydrated oxyde of iron in the dry state is very much inferior as an antidote to the moist *magma*. The common subcarbonate, kept in chemists' shops, is still weaker than the dried hydrate. M. Guibert found that it "is at least three times less powerful in neutralizing arsenious acid than the dried hydrate, and six times at least less powerful than the hydrate in a moist state." This, however, clearly shows that the common subcarbonate, or sesqui-oxyde as it is now called, is not altogether powerless as an antidote, and therefore that if the hydrate is not at hand, we should at once give large and repeated doses of it diffused in water, until the hydrate can be prepared.—*Bulletin de Therapeutique*.

## Clinical Review.

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### GUY'S HOSPITAL REPORTS.

**GUY'S HOSPITAL REPORTS.** No. XIV. April, 1842. Edited by **GEORGE H. BARLOW, M.A. & M.D.** Candidate of the Royal College of Physicians, Assistant Physician to Guy's Hospital, and Physician to the Surrey Dispensary; and **JAMES P. BABINGTON, M.A.** Trin. Coll. Cam., Member of the Royal College of Physicians.

THE Number of the Reports before us contains the following Articles :—Cases illustrative of the Diagnosis of Disease of the Kidney; by G. H. Barlow, M.A. and M.D.—Medico-Legal Report of a Case of Infanticide, with additional Remarks on the Fœtal Lungs; by Alfred S. Taylor—Observations on Pelvic Tumours obstructing Parturition, with Cases; by John C. W. Lever, F.S.S.—Observations on the Digestive Solution of the Œsophagus, and on the distinct Properties of the Two Ends of the Stomach; by T. Wilkinson King—Two Cases of Injury to the Head, followed by Symptoms of Compression produced respectively by Extravasation of Blood and Formation of Pus, relieved by Operation; by Edward Cock—Observations on Urinary Concretions and Deposits, with an Account of the Calculi in the Museum of Guy's Hospital; by Golding Bird, A.M. M.D. F.L.S.—On the Location of Pulmonary Phthisis, and its relation to Diagnosis, &c. &c.; by H. Marshall Hughes, M.D.—On the Proceeding to be adopted in a Case of Injured Intestine from a Blow upon a Hernial Sac; by C. Aston Key—Case of Irideremia, or absence of Iris, with Observations; by John Frederick France—Case of Enormously-distended Gall-Bladder: communicated by B. G. Babington, M.D. F.R.S.

#### I. CASES ILLUSTRATIVE OF THE DIAGNOSIS OF DISEASE OF THE KIDNEY.

Dr. Barlow observes, that these cases have reference chiefly to the diagnosis between disease of the kidney, and that of the bladder, or vertebral column, or lumbar muscles: The points which he thinks they tend chiefly to illustrate, are these :—

1. That there is a certain symptom connected with irritation of the kidney, and which, although not confined to it alone, is not necessarily connected with disease of those structures whose affections are most likely to be confounded with those of the kidneys. So that when this symptom is absent, we may eliminate, and therefore disembarass ourselves of the consideration of all such affections of the kidneys as would necessarily be attended by irritation of that organ: and when this symptom is present, we are furnished with a reason for assigning the seat of the disease to the kidney, in preference to several adjacent structures. The symptom in question is sickness, or rather, irritability of the stomach.

2. And further, that there is a certain symptom, or rather a set of symptoms, dependent upon the non-depuration of the blood by the kidney, whether this non-depuration be the result of mechanical obstruction to the flow of the urine, of a diminution in its quantity, or of a depraved condition of that secretion in which its most important ingredients are wanting—cerebral disorder of a peculiar character.

The cases which follow, are too numerous and too circumstantial to admit of our fully noticing them. We must content ourselves with alluding to the more prominent.

The first case is one of *Hæmaturia*, of obscure origin, found to proceed from a *Fungus in the Bladder*. There was a difference of opinion on the nature of the case. There was no sickness.

**CASE 2. Pains in the Loins of doubtful origin.—Sickness.—Tuberculated Kidney.**

Eleanor W., aged 65, April 22d, 1835. Ten years before she had suffered from what seemed a nephritic attack. Three years after that, she became suddenly hemiplegic, losing the use of her left side and the sight of her right eye: from this she recovered, but for six months she had been gradually getting ill. At that time she was somewhat emaciated, and had an expression of great anxiety in her countenance. She complained of a constant aching pain in the region of the right kidney; and was at times suddenly seized with a lancinating pain in the same situation; the violence of which was such, that she frequently alarmed the whole neighbourhood with her screams, the pain extending down the anterior and inner surface of the right thigh. Her urine was natural in quantity, and quality. Her stomach was very irritable, and she vomited frequently. Her pulse and tongue were natural.

She had occasional headaches, though this symptom was never very severe; and though very irritable, she was never delirious; neither had she *stupor*, *stertor*, *drowsiness*, or *coma*. Morphia gave most relief, but she grew worse, and died comatose on the 11th July, 1837.

*Dissection.*—Upon removing the calvaria, which was unusually thick, a considerable quantity of fluid escaped. The arachnoid was then seen to be much thickened, particularly upon the anterior and superior surfaces of the anterior lobes of the brain. This thickening was produced by both recent and cellular adventitious membrane. There was considerable serous effusion between the arachnoid and pia mater. The brain was very firm, and the cineritious substance darker than natural. There was a cell, of about the size of a pea, in the right corpus striatum. There was some serous effusion under the dura mater of the medulla spinalis; but the contents of the spinal canal were otherwise healthy. The left kidney was large: the right was externally nodulated; and, on making an incision through it, it was found to be thickly studded with tubera, varying in size from that of a pea to that of a cob-nut. These tubera were mostly of a dirty-yellow colour, and firm consistence; but one or two appeared to be in a state of softening.

**CASE 3 is one of Pain in the Loins, with Exacerbations occurring in Paroxysms. —Sickness.—Irritating Calculi in the Right Kidney.**

**CASE 4 is one of Obscure Pains in the Loins, with Sickness; disappearing upon the passage of a Calculus.**

**CASE 5. Great irritability of Stomach.—Death with Heart-disease, at the end of a year and a half.—A small Calculus in the Left Kidney.**

"Lucy C—, was admitted under my care, at the Surrey Dispensary, in the summer of 1840, with evident symptoms of disease of the right side of the heart, accompanied with most obstinate irritability of the stomach; so that for several days she could retain scarcely any thing besides effervescing draughts. She obtained partial relief: but again became my patient in the Autumn of the following year; when, in addition to the heart-symptoms, which were of in-

creased severity, she complained of pain in the left lumbar region, which was at times intense, and accompanied by sickness. She died on the 8th of December, 1841.

The body was examined the following day, by Mr. Nettlefold, and Mr. J. Miles. The disease of the heart, lungs, and liver, that had been diagnosed during life, having been found, I was asked if I was satisfied. I replied, 'No; unless some cause of irritation were found in the left kidney.' After making two or three incisions into that organ, a small sharp-pointed calculus, apparently composed of lithic acid, was found in its upper part near the line of union of the tubular and cortical structures."

Dr. Barlow observes:—In the last four cases, there was present the symptom first mentioned as dependent upon irritation of the kidney; whilst the cerebral disturbance, noticed secondly, as resulting from impaired function of the kidneys, was absent: and accordingly, in the three fatal cases, sufficient cause of irritation was found in these organs, whilst their general structure was so far healthy as to afford no impediment to the function of secretion. In the two cases which follow, the cerebral disorder, as well as the irritability of stomach, was observed during life; and, accordingly, we shall find causes of irritation of the kidney co-existing with causes of obstruction of the function of that organ.

Of two cases related in illustration, we select one.

*Case.*—Miss H——, aged between 35 and 40, was, in the Winter of 1838–9, under my care, with fever of rather low type. The most distressing symptom, throughout her illness, was, inability to retain any nourishment on her stomach; the exhaustion produced by which was such as to excite considerable alarm. During that time, and subsequently, her friends remarked a degree of apathy, which did not naturally belong to her. In September, 1840, I again saw her; when she was suffering from severe headache, attended with stupor: from this she in great measure recovered; but there still remained an apathy to all that was going on around her, which was hardly overcome by a strong sense of duty. On the 27th of April last she again consulted me, with an erythematous swelling of the legs, which was attributed to amenorrhœa. She got better, and went to Brighton: but, after having been there a few days, was seized with violent pain in the right hypochondrium and right lumbar region, attended with sickness. This was in some manner relieved, as I learnt, by fomentation and aperients. She was brought home; and on the 17th of May I again saw her. The pain had by that time returned with great severity, and was accompanied with considerable tenderness. She did not complain of much sickness, but of an apprehension that taking any thing would produce vomiting. Her tongue was furred, with very red edges: urine scanty, and dark: no œdematous swelling. She was cupped, and treated with calomel and opium, with small doses of tartarized antimony, and moderate purgatives. She was on the following day much relieved; but I then discovered that her urine, which was dark and scanty, was highly albuminous. She continued slightly to improve for about a fortnight; though she scarcely once passed twenty-four hours without vomiting, the matter ejected from her stomach being always green and acid. At the end of that time, a copious crop of purpura appeared, both on the trunk and extremities: these continued to increase for about three days; after which they became stationary, and then began to fade. Her urine, which was dark throughout, assumed a brighter colour whilst the purpura was at its height. The sickness again became urgent, and signs of sinking came on. She was at no time delirious, but became more and more apathetic. She died on the 15th of June.

*Dissection.* The head was not opened.

There was considerable quantity of bloody serum in the right, pleural sac, and a very little in the left. There was a mass of pulmonary apoplexy, occupying

nearly the whole extent of the upper lobe of the left lung; and the same was observed, though to a less extent, in the lower lobe on the same side: the right lung was healthy, with the exception of some patches of pulmonary apoplexy. The heart was small, and firmly contracted all its cavities being empty; except the right auricle, which was moderately filled with fluid blood.

The liver was pale: near its acute edge, and for some distance backwards, it was hard; but near the obtuse margin it became soft, though of the same colour as anteriorly. The spleen was large and firm.

Both kidneys were of great size, and very coarse in their structure. The enlargement was owing, apparently, to hypertrophy of the cortical portion; the tubular structure being much encroached upon, and the pelvis nearly obliterated. The right ureter was, externally, of the size of a man's thumb, from the pelvis of the kidney to within an inch of the bladder: below this, it was of natural dimensions. The enlarged portion, when cut into, appeared to consist of thickened and condensed cellular membrane, which encroached so much upon the duct as to render it nearly impervious. The mucous membrane of the bladder was, in parts, much injected. There were some large patches of ecchymosis on various parts of the external surface of the alimentary canal, and the mucous membrane of the corresponding parts was much softened.

Dr. Barlow supposes, from the thickened state of the coats of the ureter, that this patient at one time passed a calculus.

Dr. Barlow proceeds:—There are several affections of the kidney which do not necessarily give rise to irritation of that organ, and in which the sickness may not be present to aid our diagnosis: of these, the principal are the granular degeneration, suppuration, and perhaps some forms of adventitious or malignant deposit.

In the first of these, the disease depending, in the first place, probably upon congestion, and afterwards upon a chronic change in the structure of the organ, irritation is not a necessary concomitant; although the disease may, and no doubt frequently does, result from irritation giving rise to chronic inflammation: accordingly, we find that sickness is not always present, although it is sometimes a most troublesome symptom.

In suppuration, we should generally have irritation giving rise to sickness, in the first instance; and probably, at a later period, obstructed function, with its concomitant changes in the urine; and cerebral disorder, with probably, at some time, the presence of pus in the urine.

With regard to malignant disease, it is very probable that this deposit taking place, as has been remarked by Dr. Bright, in the cellular membrane connecting the firm parts of various structures, the parts of the organ in which this deposit takes place may be, as it were pushed aside, without suffering any mechanical violence or functional disturbance; at the same time, it is also probable that, in the progress of the distention to which this organ is subjected, some slight laceration, or irregular pressure, giving rise to irritation, will sooner or later occur; and, accordingly, some sudden invasion of sickness almost uniformly happens, before such deposit in the kidney has produced tumour of any considerable size. We should also in this case, probably, have some degree of hæmaturia, especially if the disease be of a fungoid character, the most common form of malignant deposit in the kidney: but this is not a necessary consequence.

Three cases follow.

CASE 7 is interesting.

*Hæmaturia—Obstinate Sickness—Fungoid Kidney.*

Dr. Golding Bird communicates the case. Ann Harrington, aged 18, admitted May 17, 1833. Her symptoms then were occasional hæmaturia, with lumbar pains, resembling those of impending menstruation, which function had never occurred. For this she took acetate of lead, with decoction of pareira;

under the use of which the blood disappeared from the urine; and after an interval of a week or two, during which she continued tolerably well, sickness at stomach appeared: this insidiously and gradually increased, from July 13, 1833, to March, 1834, with only occasional intervals of freedom: the hæmaturia returned repeatedly during these periods; and extreme agony often occurred, from a plug of coagulum obstructing the urethra. By the aid of effervescing medicine and small doses of opium, the occasional administration of hydrocyanic acid and soda-water, &c. &c., the vomiting was frequently relieved, but never disappeared. On the 16th of August, the urine, which for some months had been loaded with albumen, presented a very curious appearance, being free from blood, of a fine amber colour, and gelatinising, on cooling, like so much calf's-foot jelly, and assuming the shape of the containing vessel. This gelatinous urine subsequently became red, from the admixture of blood. Dr. Addison, at this time, regarded the case as one of fungoid disease of the kidney.

This state of the urine, with almost continual sickness and rapid emaciation, continued until April, 1834; when she left the hospital, and died at Walworth a few weeks afterwards. Both kidneys were converted into masses of fungus-hæmatodes; the calices of both were dilated, and contained some hard concretions of coagulated albumen.

*CASE 8 is one of Tumour in the Right Hypochondrium.—Temporary Irritation of the Stomach.—No apparent Change in the Urine.—Cerebriform Disease of the Kidney.*

*CASE 9 is one of Scrofulous Tumours in the Peritoneum, giving rise to a Tumour in the Right Hypochondriac and Iliac Regions, supposed to be a Tumour of the Right Kidney.*

W. V. aged 5, a scrofulous looking boy, April 3, 1840. At thirteen months old he had had ague, which lasted for three or four months. At the age of two years and a half he had scarlatina. Three months ago an enlargement was observed in the right iliac fossa, and soon afterwards one above the pelvis; at which parts there were two glandular enlargements to be felt. His abdomen enlarged very rapidly for the first month after the appearance of the tumours, and more slowly during the two following months. His mother had died of an enlargement of the liver, said to be malignant, and which appeared about two months before his birth.

His abdomen was much distended, and there was a large lobulated tumour occupying the right iliac fossa and inguinal region, and extending upwards and to the left, so as to occupy the greater portion of the umbilical and pelvic regions; there appeared, also, to be a portion of intestine crossing it anteriorly, towards its lower portion. He was somewhat emaciated; but his general health appeared in other respects, but little affected: he was cheerful, and tolerably active, till towards evening, when he used to complain of fatigue and pain in the hypogastrium. There were some glandular enlargements about the neck. His appetite was natural and bowels regular, and *he had no sickness*. He used at times to complain of much thirst: urine seemed to be natural: tongue rather furred, and dry. He was ordered small doses of iodine, with iodide of potassium. Afterwards he took liquor potassæ, and in the course of some months he died.

*Dissection.*—On opening the abdomen, there was a large tumour formed between the layers of the right meso-colon, of an oval form, the long axis about twelve or fourteen inches, the short axis about nine inches, weighing about fifteen pounds, consisting of tuberculous matter, for the most part solid, but portions in various stages of softening. There were also two tumours of the same character between the layers of the mesentery; the larger of the two about half the size of the largest; the other a little smaller. The liver contained a number of



tuberculous deposits, varying in size from that of a small bean to that of a large hen's egg.

Dr. Barlow winds up by observing:—"I would remark, that I by no means intend to assert that the irritability of stomach noticed in many of the preceding cases is pathognomonic of disease of the kidney; for, I am of opinion, that if we hope to find pathognomonic signs of disease in general, our search will be fruitless, and our diagnosis erroneous; but merely, that in cases where doubts arise as to whether any disease is to be referred to the kidney or some neighbouring organ, the absence or presence of sickness will go far to decide the question; and further, that in cases which we not unfrequently meet with—of which Case 4 is an instance—where the prominent symptom is distressing and obstinate sickness without any assignable cause, especial attention should be directed to the kidneys and every means used to determine the state of those organs.

The same observations will apply very nearly to the second class of symptoms of which I have been speaking, namely, the cerebral disorder: for we, as yet, want sufficient evidence to prove that similar derangement of the functions of the brain may not be produced by other causes. At the same time, I am fully convinced of its importance as an aid to diagnosis, and believe that it is one by which the really-accurate observer will be rarely misled."

## II. MEDICO-LEGAL REPORT OF A CASE OF INFANTICIDE; WITH ADDITIONAL REMARKS ON THE FETAL LUNGS. BY ALFRED S. TAYLOR.

Mr. Taylor sets out with the narration of a pretty clear case of infanticide where, partly owing to the state of the law, partly to the ingenuity of counsel, and partly to the humanity of the jury, the prisoner was acquitted of the crime of murder, and convicted only of concealment of the birth.

On this peg Mr. Taylor hangs some valuable observations to which we shall as briefly as possible, allude.

### *Disinclination of Juries to convict for Infanticide.*

Mr. Taylor observes that most trials for child-murder end in the escape of the prisoner. She is acquitted of the murder, in opposition to the strongest evidence against her, and found guilty of concealment of birth; so that no other punishment is inflicted than that to which a female would be sentenced who had been secretly delivered of a child that had died from natural causes, and the body of which she had afterwards concealed. But can the former serious crime be placed in comparison with a trivial offence of this description? If not, there is something manifestly wrong, in finding a prisoner guilty of an offence, for the sake of punishing her for a crime of which she has been acquitted. The only explanation of this anomaly in our criminal jurisprudence, is, that juries regard the law as too severe for many cases of this description, since there is no alternative between an acquittal and a capital conviction. While we admit that there are cases of infanticide in which capital punishment would perhaps be too severe, we must also allow, that other cases of murder are too severely punished: or that two years' imprisonment for a minor offence, which necessarily accompanies child-murder, is an insufficient penalty. Allowing that, in the instance before us, the child had lived a week before it was strangled, what would have been the verdict of the jury? They would probably have pronounced the prisoner guilty, although the medical proofs of life and the cause of death could not have been stronger than they were in the case of this child. And yet, so far as the repression of crime is concerned, we cannot see that there is less criminality in destroying a child which has lived only an hour, than in destroying one which has lived a week. At present, then, in this country, the effect of capital punishment being attached to the crime, in all cases, is to prevent conviction in the large majority

of them. Whatever the force of medical evidence may be, juries appear to consider that the acquittal of a prisoner charged with child-murder is the lesser evil;—that society will suffer less by her liberation, than the cause of justice could gain by her execution. It is unfortunate that there is not some intermediate punishment, as in the French law, which is in this respect much superior to ours; and it is to be regretted, that, by certain constrained interpretations of the law, as to the proofs of life and live-birth, the science of medical jurisprudence is made to bear the onus of these acquittals.

#### *The Hydrostatic Test.*

Mr. Taylor relates several cases and experiments with the view of determining the value of this.

We pass over these, and content ourselves with stating his conclusions.

#### *1. The Test of Ploucquet.*

This refers to the ratio of the weight of the lungs to the weight of the body. Mr. Taylor observes that "it is clear, from the cases reported in this Paper, that the test is not even capable of furnishing corroborative proof, and that it would be unsafe to rely upon it. I subjoin a Table of the Weights of the Lungs and Bodies, in the twelve cases of mature children reported; separating those which had respired from those which had not.

			<i>Before Respiration.</i>		
Weight of the Body.			Lungs.		
1.	..	57,000 gr.	..	..	694 gr.
2.	..	62,660	..	..	683
3.	..	34,540	..	..	630
4.	..	47,170	..	..	703
5.	..	51,890	..	..	744
6.	..	29,460	..	..	520
7.	..	29,966	..	..	666
8.	..	47,025	..	..	658
9.	..	39,370	..	..	550
			Ratio.		
			1 : 82		
			1 : 91		
			1 : 54		
			1 : 67		
			1 : 70		
			1 : 57		
			1 : 45		
			1 : 71		
			1 : 71		

The second and third cases on the Table show that there is no sort of constant relation between the weight of the lungs and that of the body; for while the body in No. 2 weighed nearly twice as much as in No. 3, the lungs in the respective subjects differed in weight only by fifty-three grains. Thus, then, it does not follow, as it has often been stated, that when the body is below the average weight, the lungs will also be below the average. There are many facts on record which bear out this view; but the two cases referred to, prove that, in practice, an inference of this kind must be cautiously employed. The ratios, it will be seen, differ so widely from each other, as to render Ploucquet's test a very uncertain guide in infanticidal investigations. In a Paper published in a late Number of the Edinburgh Medical and Surgical Journal, No. 148, Dr. Guy has come to a similar conclusion, from an examination of cases, derived partly from his own experience, and partly from that of others.

#### *After Respiration.*

Weight of the Body.			Lungs.		
1.	..	56,160 gr.	..	..	1000 gr.
2.	..	34,125	..	..	861
3.	..	41,788	..	..	920
			Ratio.		
			1 : 56		
			1 : 39		
			1 : 45		

The comparison of these ratios, obtained from lungs after respiration, with those obtained before respiration, will show that Ploucquet's test is not fitted to determine, in an unknown case, whether a child has breathed or not."

### 2. Absolute Weight of the Lungs.

The average weight before respiration, derived from the nine cases reported in the Table, is 619 grains. It is of importance, in making an estimate of this kind, to be certain that the child is at or near maturity; and it would be better, in all reports of cases relating to infanticide, if, instead of the bare assertion that the child was mature, the reporter would describe its general characters, so that every one might have the opportunity of forming a judgment on the subject.

The average weight of the lungs after respiration, derived from three cases in the Table, is 927 grains; but in making an estimate of this kind, much will depend upon the degree to which respiration has been carried. In Mr. Cook's case, where the child was probably killed soon after birth, the lungs weighed 1000 grains. In Mr. French's case (Case 7), where the child lived eight or nine days, the lungs weighed only 801 grains. In the first case, respiration had been perfectly performed; in the second, imperfectly. This increase in weight after birth is commonly ascribed to the altered course of the blood under the establishment of the respiratory process; and to the fact, that more blood circulates through the lungs after than before respiration. This view appears to be borne out. Mr. Taylor argues the question, and shows that the balance of evidence and of probability is on the side of increase of weight in the lung being derived from respiration.

### 3. Artificial Inflation.

In a former paper, three conclusions were derived from many experiments, viz. :—

1. That, in artificially-inflated lungs, the air might be forced out by compression, when the pressure was applied, not to the entire, but to the divided lung. It was stated, that this experiment had succeeded in all cases, even when the lung had been violently inflated after removal from the thorax; though in this case it was a difficult process, and required several repeated compressions.
- 2dly. That the air might be forced out of lungs which had imperfectly respired; and that as these did not differ in weight from the fetal standard, there were no means of distinguishing artificial inflation from imperfect respiration, in new-born children.
- 3dly. That where respiration had been perfectly established, the air could not be forced out by compression, without entirely destroying the structure of the organs.

Mr. Taylor now details the results of further observations.

1. One lung was artificially inflated, when removed from the thorax, in Cases 2, 3, 5, and 6; and in all of them it will be seen, that although the inflation was carried to different degrees, the air was ultimately forced out by pressure. In Cases 2 and 3, the mere pressure between the fingers sufficed to cause several portions of lung to sink. In Cases 5 and 6, there was very great difficulty in expelling the air, even by repeated pressure in a folded cloth; and the structure of the lung was bruised, although it could not be said to be destroyed.

Mr. Taylor goes on to observe :—

"In all these instances, however, the lung was inflated externally to the chest. The real force of the objection clearly consists in the degree of inflation which we can give to the lungs, *in situ*, of a still-born child, where the air is propelled for the purpose of resuscitation. The difficulty of inflating the lungs in a new-born child is too well known to require here to be adverted to: the greater the violence used, the less likely is the air to pass into these organs; but it rather finds its way, through the œsophagus, into the stomach and bowels. In Case 1, only about one-thirtieth of the structure of the lungs had received air by inflation in the usual way. In Case 3, inflation was repeatedly resorted to, but no part of the lungs had received a trace of air: it passed entirely into the abdomen. In Case 5, attempts were made by the accoucheur, for upwards of half

an hour, to inflate the lungs; but, on examination, not a particle of air had penetrated into them. In Case 6, inflation was also resorted to, but no air was found in the lungs. In Case 10, inflation of a small portion of air only entered the lungs, and this was easily forced out by compression. These observations seem to me to establish, that there is considerable difficulty in inflating the lungs of a new-born child: and if this be admitted with respect to a medical practitioner, *a fortiori* it must stand with regard to a woman secretly delivered of a child, the only form in which the objection, on the ground of artificial inflation, can be practically contemplated. But, admitting that the lungs may be thus inflated, these and other observations establish, that the air may be expelled by compression, and much more readily than where the inflation is performed, as it commonly is, externally to the thorax. Any attempt at inflation, made under the design of resuscitating a child, would, it appears to me, be easily distinguished from perfect respiration, by a practitioner acquainted with the subject. It is not pretended that there are any means by which he can distinguish lungs so inflated, from those which have imperfectly or feebly respired. It must also be remembered, in discussing this objection, that the lungs of a still-born child are not inflated under the design of causing them to resemble respired lungs in their physical characters, and to acquire great buoyancy in water; although, from the views that have been promulgated on this subject, it would seem that the only object of inflation was, not to resuscitate it, but to make its lungs resemble those of a child which had died after having fully breathed. In allowing that an accused party is entitled to every benefit arising from a medical doubt, we must not outrage all probability, and admit that a woman recently delivered can succeed in accomplishing what cannot be done by a practised accoucheur; namely, in filling every part of the structure of the lungs with air. A woman trying this experiment is necessarily ignorant of the method of performing it; and may therefore employ great violence, in which case she is still less likely to succeed."

We apprehend that this is about the last thing women will be likely to attempt, or, if they attempt it, to succeed in. A woman, indeed, must be a very learned fool to dream of such a thing.

2. The air may be forced out of lungs that have breathed imperfectly. This conclusion is clearly confirmed by the result of Case 4, a case of imperfect respiration. Here, however, very great pressure was required: still the effect was the same as if the lungs had been artificially inflated.

3. "Air cannot be forced by pressure out of lungs that have fully breathed. None of the cases which I met with admitted of this experiment being tried; but the result obtained by Mr. Coales corroborates the view above taken; and so also does Case 7, observed by Mr. French; yet here it might be fairly objected, that respiration was imperfect; and the inference ought rather to be, that, in some states of imperfect respiration, the air resisted expulsion by compression. In Case 15, observed by Dr. Geoghegan, although the lungs here were well filled, most probably by respiration, yet compression caused the greater number of pieces to sink, without entirely destroying their structure. In Case 14, that of an immature child, the lungs were well filled with air by respiration; and this was expelled on very moderate compression, so as to cause them to sink.

Taking the whole of these results, it does appear that there is too great uncertainty to allow of the application of this test of compression, to the extent to which previous experiments would have justified us in applying it."

After some farther remarks, Mr. Taylor proceeds:—

"There are two cases which might give rise to some doubt on the source of the air contained in the lungs of a new-born child:—

1. Where, in a child that has not breathed, the lungs are disproportionately

heavy, weighing 900 or 1,000 grains, and they have been artificially inflated in the attempt to resuscitate it. Unless, in this case, the air were expelled by compression, an inference might be hastily drawn, that the child had probably breathed after birth. The error could only be removed by circumstantial evidence; which, however, is generally sufficient to remove a speculative objection of this kind. But unless the foetal lungs were highly congested, diseased, or of extraordinary size, it is not likely that they would weigh so much as is here supposed. This kind of doubtful case might always be suspected to exist where, with considerable absolute weight, the lungs contain very little air.

Let us, however, consider what would be the practical bearing on the question of child-murder, supposing the case not to be cleared up by any of the methods above suggested. 1st. The fact of respiration would not be clearly proved, because the great absolute weight of the lungs, without their being fully permeated with air, amounts to nothing. 2dly. Although the proof of respiration might not be made out, this would not show that the child was born dead; for we know that a child may live many hours, and yet no evidence of life may be derived from an examination of the lungs. 3dly. Admitting that there was proof of the child having lived after birth, whether there were evidence of respiration or not, the cause of death would have still to be made out: and unless this be clearly traced to the wilful and malicious conduct of the prisoner—proofs of which are not likely to be derived from the body of a child whose lungs she has inflated—she must be acquitted. Thus, then, it is difficult to understand how, in the hands of one who has attended to the subject of infanticide—and no others ought to be allowed to give medical evidence—this objection, on the ground of inflation, can lead to any difficulty whatever in practice.

2. We will now take the converse objection. A child may live and breathe, and its lungs weigh much under the average of respired lungs, i. e. about 700 grains. In a case like this, unless the air resisted expulsion by compression, an opposite mistake might be made, and we should pronounce a child that had really breathed and survived birth to have been still-born and had its lungs artificially inflated. This might happen in numerous cases of imperfect respiration after birth, did we not know that the sinking of the lungs, whether containing air or not, and whether this air be expelled by compression or not, does not prove that the child was born dead. It can only show, under the most favourable circumstances, that it has either not respired, or respired imperfectly. The sinking of the lungs may take place in a child that has survived birth and has really been murdered; but, in such a case, there might be no proofs of life; and therefore a person really guilty of a crime must be discharged for want of sufficient medical evidence to convict. This, however, could no more justify the entire abandonment of medical evidence in such cases, than it could of general evidence; because this, like that which is purely medical, is but too often insufficient to bring home guilt to the really guilty. The objection, then, on the ground of artificial inflation, is more speculative than real. Admitting that there is no positive criterion to distinguish this condition from respiration, it is difficult to conceive a case in which it could be sustained; and if sustained, it never could lead, in the hands of proper witnesses, to the inculpation of the innocent: unfortunately for society, it would only add another loop-hole to the many that, through the necessary forms of law, now exist, for the escape of the really guilty."

#### 4. *Signs of Maturity in New-born Children.*

It has been generally considered, on the authority of Chaussier, that, in a mature child, the opening for the umbilical cord corresponds to the centre of the length of the body. But the cases reported by Mr. Taylor show, that, in mature children, the umbilicus is from a quarter to half an inch below the centre.

### 5. *Signs of Live Birth.*

Among these, we find enumerated the presence of a circle of redness at the junction of the umbilical cord with the skin of the abdomen. In the former Paper, the fallacy of this criterion was established, by the report of a case wherein this line of redness was discovered, although the child was born dead. In five other cases of still-born children, the circle of redness was found. On the other hand, it has not been found where the child has been born alive and survived its birth. The existence of a line of redness in this situation cannot, therefore, be regarded as a sign of live birth.

The contraction of the ductus arteriosus has been usually considered a positive evidence of live birth, although it strictly depends on the degree of respiration established. In Cases 5 and 8, where the children were born dead, Dr. Geoghegan remarked a slight contraction about the centre of the vessel. This is a point which requires to be still further investigated.

## III. OBSERVATIONS ON PELVIC TUMOURS OBSTRUCTING PARTURITION. With Cases. By JOHN C. W. LEVER, F.S.S.

After a rapid historical sketch, Mr. Lever observes:—Pelvic tumours take their origin from various parts and tissues of the pelvis; and in considering them, it will be advisable to arrange them into two classes: 1st. Those which implicate the pelvis itself, or those organs and structures concerned in the birth of the child: and, 2dly, Those tumours which belong to or implicate the parts in the neighbourhood of the birth-passages. The first division will comprehend, *A.* tumours of the bony pelvis and its ligaments; and, *B.* tumours of the uterus and vagina, which, by their size or structure, impede the progress of a natural labour. The second division will include those diseases of the ovaries, Fallopian tubes, rectum, bladder, cellular tissues, as well as those varieties of pelvic hernia, which may offer an obstruction to the course of natural parturition.

### 1. *Tumours of the bony Pelvis and its Ligaments.*

There are two varieties of tumour which originate in the bones of the pelvis; viz. exostosis, and osteosarcoma.

Exostoses take their origin from either the internal or external plate of the bone; while through their whole structure, and throughout their course, they preserve the normal texture of osseous matter: or the tumour may be harder than true bone, although possessing the integral, chemical, and microscopical characters of bone. Osteosarcoma is a mixed substance, partly osseous and partly fungous, more commonly proceeding from an articulation or a ligamentous structure than from a bone.

The most common situation for the commencement of pelvic exostoses is the last bone of the sacrum; they have also been found at the junction of the last lumbar vertebra with the sacrum. Occasionally, they are found growing from the pubes or ischia; but examples of exostoses growing from these bones are more rare than cases of this tumour springing from the sacrum. The situation of the tumour will have a material influence in the production of symptoms by which their presence may be suspected, particularly the pressure which their contiguity to important viscera, vessels, and nerves, enables them to exercise; but in most instances, their existence has not been dreamt of, until the period of utero-gestation has been completed, and the progress of the labour is found to be obstructed by a foreign body occupying the pelvic cavity.

The diagnosis of these tumours is by no means easy: their firm attachment to the bone itself, and their great hardness, are the two principal signs by which they are to be distinguished. Projection of the promontory of the sacrum, caused by

rickets and exostosis of the sacrum, may be confounded. The state of the pelvis in other respects, and the general aspect and constitution of the patient furnish, perhaps, the principal indications.

The formation of exostosis is frequently to be traced to some external cause, as a blow, kick, fall, &c.; but there appears to be some constitutional predisposition to osseous deposit, to account for their development. Patients who have suffered from rheumatism, or those in whom the gouty diathesis exists, seem predisposed to the formation of exostosis.

The size, form, and seat of the exostosis must exercise a considerable influence upon the prospect of recovery to the mother, and safety to the child, when these tumours are complicated with pregnancy. Cases are recorded, where the pelvic cavity was completely filled with a tumour of this kind; whilst others are published, and specimens are preserved in some Museums, in which the bony tumour is so small, that if the head of the fœtus had been of normal dimensions, no great or serious impediment to its delivery could have taken place. In form, these tumours are generally more or less round or conical; but if the shape of an exostosis be long, and if by its length it encroaches upon the pelvic cavity, it will render the labour more serious. The situation of the exostosis is of especial moment, for the difficulty and risk of labour is much greater when exostoses are situated in the pelvic cavity; and, besides, there is more danger when they coarct the brim of the pelvis, than when they encroach upon the outlet. Although these tumours are not generally discovered until the patient is in labour, yet a vaginal examination, made either to ascertain the condition of the uterus itself, or the causes of various symptoms, may lead the practitioner to the detection of the tumour before the patient is pregnant, or before utero-gestation was advanced too far to allow of its being terminated artificially.

After detailing a case, Mr. Lever thus touches on the treatment. "If," he says, "a tumour be discovered in a female who is pregnant, the most careful examination must be instituted, to ascertain its seat, its dimensions, and the difficulties its form may create: and after these have been satisfactorily made out, the practitioner must then determine whether he can safely permit his patient to go to the full period of gestation, and trust her delivery to the natural efforts, or to his assistance by means of the forceps, or whether the circumstances will warrant him in inducing premature labour or abortion.

If the exostosis be small, and especially if it be attached to one of the bones forming the outlet of the pelvis, the practitioner should give the patient a fair chance of delivery by the natural efforts, particularly if the pains are vigorous, and the fœtal cranium is not firmly ossified, but compressible, as in the case related by Danyau, in his Lectures. Burns quotes a case from Campbell, where, from pelvic exostosis, the left parietal bone was so greatly sunk as to cause the eye to protrude: and Dr. Rigby relates, that Professor Otto, of Breslau, mentions the case of a woman who had pelvic exostosis, being the mother of four children, in each of whom a small portion of the cranium was depressed, and not ossified. But if the surgeon determine to allow a full trial of the natural efforts, he must carefully watch his patient, lest her strength become exhausted, or lest rupture of the uterus take place. If the conjugate diameter of the pelvis will allow the introduction of more than three fingers, the forceps may be applied; and amongst the circumstances rendering their employment necessary, pelvic exostosis is mentioned by Madame Boivin, in her celebrated "Memorial." If this instrument have been employed ineffectually, or if the conjugate diameter of the pelvis measures less than the breadth of three fingers, craniotomy must be had recourse to. Some writers have recommended the operation of turning to be performed; but although version may be accomplished, the difficulties arising in the delivery of the head will not be lessened by the alteration of the position of the child; and although more extractive

force can be used, yet the force necessary to effect the delivery may not only cause the death of the child, but also occasion that of the mother; as in the case of Van Döverin, alluded to by Naëgle. Symphysiotomy, recommended by some writers, appears not to have been followed by success in the hands of those who have practised it; although Michell asserts, that after its performance the forceps may be applied, where previous attempts to introduce them have failed. Gardien states, that in exostosis of the base of the sacrum impeding the descent of the fœtus, symphysiotomy is the only remedy whereby a living child can be delivered. If the exostosis be not discovered until the completion of utero-gestation; or if it be of large size, as in the extraordinary case of Dr. Haber, of Carlsruhe; or if it be so located as to prevent the introduction of the forceps; or if it be impossible to extract the child, even after the cranial contents have been evacuated; the only mode of delivery is by performing the Cæsarian section. Rulcan, Leydig, M'Kibbin, (Edinburgh Medical and Surgical Journal, Vol. XXXV.) Spitzbarth, and Siebold, have performed the Cæsarian section in labours complicated with pelvic exostosis. But if we have the opportunity of ascertaining that such a tumour exists, which will prevent the delivery of the patient by the natural efforts or by the employment of the forceps or vectis, or if its dimensions are such that perforation must be performed, or even the Cæsarian section itself may be necessary, it is most assuredly our duty to induce artificial delivery; the period of pregnancy, at which the operation is to be performed, depending altogether on the size and situation of the pelvic obstruction."

Of *Osteosarcoma*, we need only observe that—fixed pain generally marks the inflammation which attends the onset of these tumours. Their diagnosis is very difficult: when one exists, it may be mistaken for the fetal head; but its origin from some part of the bones of the pelvis, and its consistence, are the two grand distinctive marks that assist in the diagnosis. This latter feature must also enable us to distinguish between those tumours and pelvic exostosis; the latter being hard and unyielding throughout; the former being hard in some places, soft in others; in some places permitting compression, in others resisting it. Its form, also, is occasionally irregular.

*Ossicula from Fracture of the Pelvis* should be alluded to. They occasionally project much into its interior.

#### TUMOURS OF THE UTERUS AND VAGINA.

Mr. Lever treats of uterine tumours under these heads:—*a.* Induration of the os and cervix, the result of chronic inflammation. *b.* Abscess of the neck of the womb. *c.* Elongation of the anterior lip of the os uteri. Specific tumours, including, *d.* Hard or fibrous tumour. And *e.* Polypi and malignant tumours; embracing, *f.* Carcinoma, and Cauliflower Excrescence.

##### *a. Induration of the Os and Cervix.*

Induration of the mouth and neck of the womb is not unfrequently met with, as an obstacle to the progress of labour. It appears to be the result of chronic inflammation, which has continued for some time unattended to, or uncontrolled by the remedies which have been employed. It may affect both limbi of the os uteri at once; or, what is more common, one only may be hypertrophied. The anterior is more frequently enlarged and indurated than the posterior: this, no doubt, is caused by its position rendering it more exposed to those causes which induce inflammation.

Mr. Lever points out the symptoms, which must be pretty familiar, of chronic



inflammation of the os and corvix uteri. The following is the method of treatment that he recommends.

"This induration of the os uteri is met with in parturient women; and is occasionally a cause of obstructed labour, preventing its dilatation sufficient to permit the passage of the child. The treatment that I have employed, in such cases, consisted in venesection, the administration of tartar emetic, and the employment of the warm bath. Bleeding may be advantageously resorted to, where the patient is plethoric, and when she is not worn out by the continuance of the dilating pains of labour; but if she be of delicate habit, or if the labour has been of long duration, venesection will be found to predispose to subsequent uterine hæmorrhage: this remark accords with the experience of the most practical accoucheurs; amongst others, Dr. Ramsbotham, sen. Tartar emetic I regard as a most valuable remedy in these cases: it is a medicine which exercises a peculiar influence on all rigidities of the os uteri; and its effects is so completely to master all resistance, that it permits the necessary dilatation to take place: it is also a medicine so completely under control, that if we find its nauseating effects too great or too long continued, we have only to tickle the fauces of the patient, and we at once cause her to reject the medicine, and excite re-action of the system by the production of vomiting. When administered in cases of induration, it should be given in doses sufficient to produce nausea; this nauseating effect must be kept up for some time; the period to be regulated by the altering condition of the os uteri, and by the general condition of the patient. When the dilatation of the mouth of the womb has been produced, a full opiate should be administered, to maintain its relaxation, and to prevent that spasmodic and irritable condition of the os uteri which so frequently co-exists with induration. A recurrence of uterine action will then generally be successful, in completing the delivery.

The warm bath I have employed in but one case; but so pleased was I with its effects, that whenever I have the opportunity, I shall again order its employment in the obstruction under consideration. The great difficulty, however, is its application when ordered; as in but few houses do the means exist of heating water in so large a quantity, and so quickly as necessary."

Mr. Lever relates three cases, but it does not seem necessary to introduce them. Suffice it to say that nauseating doses of the tartar emetic, succeeded by an opiate, answered perfectly in two, while the warm bath had a surprising effect in the third.

*b. Abscess.*—Mr. Lever has seen one case of abscess of the portio vaginalis of the uterus, which occurred in a patient six months advanced in utero-gestation; and although the abscess evacuated its contents previously to the occurrence of preternatural labour, still the adhesive matter which had been thrown out, and which formed the walls of the abscess, offered a serious obstacle to the dilatation of the mouth and neck of the womb. Mr. L. relates the case in question.

*Case.*—Mr. Lever was requested to see Mrs. C., a lady 24 years of age, who was in the sixth month of her second pregnancy, having previously aborted at the fourth month. For a week she had suffered from constant acute pain in the passage and above the pubes, increased upon her assuming the erect posture, moving her thighs, and also during the expulsion of the contents of the rectum and bladder; the pain did not extend to the back or thighs, and there was no vaginal discharge. The pulse was quick and sharp; the skin hot and dry; the tongue furred; and the bowels, which had been opened in the morning, had caused her great increase of suffering. The fæces were very hard.

Twelve leeches were applied around the vulva, and above the symphysis pubis. The decoct. papav. was ordered to be frequently injected into the vagina; and

castor oil, with saline medicine, was prescribed. Next day, twelve more leeches were applied.

"I was called to her early the next morning; and was informed, that after passing a very bad night from excessive throbbing and pain, there had been a sudden copious discharge of pus mixed with blood: its quantity could not have amounted to less than three ounces, and its evacuation was followed by immediate relief. Internal examination was now for the first time permitted; the vagina itself was ascertained to be natural to the touch; but on the right side of the mouth of the womb a large cavity was found: this was the seat of an abscess, which had ulcerated, and burst into the vagina: the opening was so large, that it could not have altogether been caused by the process of ulceration."

The abscess discharged satisfactorily, and healed in about three weeks. This lady was now subjected to exertion and jolting in a carriage which induced great pain in the loins, back, and thighs, accompanied with discharge of blood from the os uteri. Notwithstanding all the means recommended and usually found of service in preventing premature labour were had recourse to, they proved of no avail; for in three days after the first appearance of these untoward symptoms, discharge of the liquor amnii took place, the uterine contractions returned, were regular, and of an excruciating character. The feet of the fetus presented: after some considerable time, owing to the non-dilatability of the os uteri, the nates passed, but the greatest difficulty was experienced in the passage of the head. But little assistance could be rendered by traction, as the child was in so decomposed a state, that very little force would have been required to have separated the trunk and left the head in the uterine cavity. A length, during a powerful fit of vomiting, the head suddenly slipped from the uterus, followed by the placenta. Her convalescence was rapid. This lady has again been confined, and but little impediment was offered to the dilatation of the os uteri. Twelve months elapsed between the two labours.

Mr. Lever refers to another case related by Bonetus. The woman was the wife of a soldier, who was in labour for five or six days; and at last died, worn out with pain. The uterus being inspected, a large abscess, filled with very putrid pus, was found in the neck.

#### *c. Prolongation of the Anterior Lip of the Os Uteri.*

This state of parts, says Mr. Lever, generally occurs where there is a non-yielding of a portion of the os uteri; and the part more commonly affected is the anterior lip. In these cases, there is generally a small pelvis; and the head passes into the brim, before the os uteri is thoroughly dilated. The anterior portion of the os will then be forced down between the head of the fetus and the pubes; and is prevented from being freed by the occurrence of successive pains, each uterine effort serving only to render the grasp more tight. The effect is soon perceived by the strangulated portion becoming œdematous; and if within view, it will be found of a dark colour. The uterine efforts are regular, and most commonly violently expulsive, short in duration, and terminate suddenly with a cry of despondency, which is well marked in the patient's looks and expressions. Mr. Lever cites a remarkable case reported by M. Duclos. He then proceeds:—"The shape of these enlargements is generally round: their length varies: it may not extend to more than an inch, or, as in the cases of Duclos, and one presently to be mentioned, it may project through the vulva. Their formation appears to depend upon the pressure to which the anterior lip is exposed, in a small pelvis, by the fetal head: the circulation in the part becomes retarded; the veins cannot return the blood sent into them; effusion into the cellular tissue takes place, and consequent swelling of course, increasing in proportion to the duration of the pressure, and itself, in turn, becoming an obstacle to the onward progress of the child's head. The diagnosis of these swellings, if large, is at first not easy, especially if we have not had charge of the patient

from the commencement, or can get but a brief and imperfect account of the *os uteri* at the commencement of labour. It may be distinguished from polypus, with which it is most likely to be confounded, by there having previously been no symptom of that disease; by its feel, form, and attachment. From the placenta it may be distinguished by the history of the labour, the *os uteri* being natural at its commencement; by there being no hemorrhage, or any other symptom to mark the prævisible placenta.

It is by no means uncommon to meet with those cases of prolonged anterior lip in a minor degree. The labours in which this condition is manifested are generally tedious, and there exists more or less non-yielding of the *os uteri* from the commencement. If, with the view of relaxing the *os uteri*, the ant. pot. int. be exhibited, this prolongation does not usually occur; but were it to form, when each successive pain serves but to increase its size, and where the patient's looks and expressions are assuming a character of despondency, the best plan of treatment that I am acquainted with, and one which I almost universally find successful, is the keeping two or three fingers fixed against the swollen anterior lip during the pains: these prevent further elongation; and I have generally found, that after judicious pressure has been maintained for some time, the strangulated portion will slip up, and the head descend. By some writers we are recommended to puncture the swollen *os uteri*. I have performed this operation but once; where the elongated lip protruded through the *os externum* was of a dark colour, and very œdematous. In such cases, after delivery, fomentations should be persevered in for some time: the one I employ is the decoction of chamomile-flowers, to which a small portion of rectified spirit is added. The only inconvenience I have found to follow the prolongation of the anterior lip is the retention of the urine for two or three days, rendering the introduction of the catheter necessary. The state of the bladder must be attended to during labour, whenever this elongation exists to any extent."

Mr. Lever relates two cases in illustration.

*d. Hard or Fibrous Tumours of the Uterus.*

We see nothing particular in Mr. Lever's description of these.

Of the medical treatment of Fibrous Tumours we need say nothing. The following are Mr. Lever's sentiments on the surgical treatment. Some writers, says he, have recommended the removal of these tumours, by the operation of excision. Lisfranc has removed them, by making incisions through the cervix. If the tumour be limited to the portio vaginalis of the uterus, the operation of removal may be resorted to. An interesting case of this kind is related by Dr. Ingleby, which was removed by Mr. Evans, of Belper; but, as a general rule, it may be affirmed, that while these tumours are within the cavity, they will not admit of removal; but if they become pediculated, and pass through the *os uteri*, they may be treated in the same way as polypi uteri.

The operation of puncturing these tumours is of little avail, as, for the most part, they are solid: if they contain fluid, it is generally of a glairy, gelatinous, or grumous consistence; and the evacuation does not give rise to sufficient collapse to allow of the transmission of the child, when an obstacle sufficient to impede its birth is occasioned by the tumour. The operation of turning is useless, when fibrous tumours occasion such an obstacle to the birth of the child as to render artificial assistance necessary; not to mention the difficulty experienced in introducing the hand into the uterus, to grasp the feet. If called to a patient in labour, in whom such an obstacle to the passage of the child exists, we must make a careful examination, to ascertain whether we can safely leave the case to the natural efforts; but if we are convinced that the unaided powers of the womb will not be sufficient to expel the child, we must then determine whether the embryospastic or embryotomic instruments must be employed to complete delivery. In such complications, we must not allow the labour to proceed

too long before such assistance is given; as not only may the tumour be so bruised and compressed, that inflammation of its structure, followed by suppuration or gangrene, may take place, but also the uterus itself may give way; as in the case recorded by Fabricius Hildanus, c. 1, obs. 67. Sometimes the tumour is so large, that embryulcia cannot be performed; or, if the head is perforated, the child cannot be extracted through the small space. A case of this kind is related by Dr. Montgomery, at p. 188 of his valuable work on the Signs and Symptoms of Pregnancy.

Section of the symphysis pubis, recommended by some French writer, has not been practised in this country; and if performed, is not likely to be of any avail.

Induction of Premature Labour.—If a patient affected with a fibrous tumour become pregnant, and if that tumour be so situated, or be of such a size, that it will impede the progress of labour, it becomes a matter of great moment to determine whether or not the operation for the induction of premature labour should be performed. This operation, recommended by Akakia, in his Treatise on Female Diseases, has received the sanction of Dr. Ashwell.

Mr. Lever relates four cases which present no particular features.

#### *e. Polypus or Polypoid Tumours.*

Under this division, Mr. Lever includes all pediculated tumours not malignant, whether of a cellular, glandular, or fibrous texture, which, by their attachment to the uterus, impede or prevent the progress of labour.

We see nothing in his observations to detain us, unless it be one on the Ligature. "Obstetric writers and practitioners recommend ligatures of various kinds, as waxed silk, catgut, silver wire, silk wrapped round with wire, &c.; but no ligature, in my opinion, is preferable to whipcord: it has been shown by Mr. Walne, in the Medical Gazette, July, 1836, that whipcord, when moistened, increases in thickness, and diminishes in length: thus, such a ligature, after its application, and when bathed in the discharge, will tighten itself very considerably. The canula I employ is the one in use at Guy's Hospital: it consists of Gooch's canula, to the outer end of which a rack has been superadded, so that the ligature may be gradually tightened from time to time by turning the rack, instead of unwrapping the end of the ligature and drawing it tighter, as was necessary in the original instrument."

Mr. Lever proceeds to

#### MALIGNANT DISEASES ASSOCIATED WITH PREGNANCY.

##### *Carcinoma Uteri.*

Mr. Lever remarks that, so far as he has seen, the encephaloid form of carcinoma is more frequently found in younger females than the scirrhus variety.

The part of the womb most frequently attacked by scirrhus disease is the neck. Some writers, as Sir C. M. Clarke, Blundell, &c. attribute this to the cervix being the most glandular part: others, as Wenzel, admit the fact, but explain it by stating the cervix is more exposed to injury. Puchelt has collected thirty-two cases of labour complicated by scirrhus uteri, where the seat of disease was as follows:

The whole uterus was scirrhus in	1 case.
A large portion of the organ	- 5 cases.
The neck of the uterus	- - - 11 - - -
The neck and mouth	- - - 5 - - -
The mouth alone	- - - 6 - - -
The left side	- - - 1 - - -
The body	- - - 1 - - -
The fundus	- - - 2 - - -

Total - - 32 cases.

Passing the account of the appearances which carcinoma presents, we advert to Mr. Lever's notice of its prognosis in connection with pregnancy:—1st, the prognosis with respect to the mother, and, 2dly, the prognosis with respect to the child. With respect to the mother, much depends on the method of delivery. If the scirrhus formation be in its early stage, if it be small in size, and if the patient's constitutional powers have not been too much lowered, the woman will generally go through her labour; although such process may be rendered lingering, by the pressure of such a tumour: and even when the child has been delivered with instruments, the patient will, for the most part, recover the immediate shock of parturition, to die at an earlier or later period, from the effects of the malignant disease. But it must be allowed, that all lesions, whether terminated naturally or artificially, cause the progress of the malignant disease to be more rapid. Of twenty-seven women, Puchelt informs us five died during labour, nine a short time after labour, ten recovered, and in three cases the results were not known. Abortion not unfrequently takes place when there is malignant disease of the uterus. The prognosis with respect to the life of the child is generally unfavourable; for the length of the labour, superadded to the compression which the child's head has to undergo when the carcinoma exists at the mouth or neck of the womb, where the patient is delivered by the unaided natural efforts or by the use of the embryoplastic instruments, is generally sufficient to cause the death of the child. In the twenty-seven cases previously referred to, fifteen children were still-born, ten were born alive, and in two nothing is stated respecting the viability of the child.

For the benefit of such of our readers as are likely to be placed in such embarrassing circumstances, we are tempted to extract Mr. Lever's observations on the treatment. "In determining," says he, "the method of treatment to be adopted in a case of pregnancy combined with malignant disease of the mouth or neck of the womb, we must carefully examine the seat, form, and size of the opposing obstacle; ascertain, if possible, and with as much accuracy as the case will admit, the dimensions of the pelvis; and then cautiously determine in our mind the chances of delivery occurring at the full period, by the unaided efforts of the uterus. In a case to which I shall presently allude, and where the tumour occupied the posterior part of the cervix, the labour, although rendered lingering, was terminated by the unaided uterine efforts.

Such instances, however, are rare; and artificial assistance of various kinds is necessary. Some authors recommend emollient injections:—these are of no avail. Others extol large blood-lettings:—venesection, although of the greatest advantage in simple rigidity of the os uteri, and induration of the os and cervix, the result of chronic inflammation, will be found of little or no value in carcinomatous affections of the uterus. Others, as Madame Boivin and Dr. Ashwell, recommend incisions to be made in the diseased parts, to permit the passage of the child: and it cannot be denied, that had such an operation been performed in many of the recorded cases where the patients have died undelivered, either from rupture of the uterus or collapse, the chances are that the mothers' lives would have been prolonged, and the viability of the children secured. Some authors, as Lieutaud, Duges, &c. recommend the extirpation of the tumour by the knife or cautery: this practice, however, is not adopted in this country; neither, in my opinion, is it at all practicable, much less advisable. Siebold recommends that version should be employed in such complications as these under consideration; but to introduce the hand into a uterus so much affected with malignant disease as that it is not considered prudent to leave the case to the natural efforts, and then to grasp and bring down one or both feet, would necessarily be attended with much violence and laceration, and the passage of the foetal head would still present a great difficulty. It is, moreover, very unlikely that such an operation will become successful, as it regards the life of the child; for, in addition to the causes operating to render its viability doubtful, which is

the case whenever version is performed, we have the additional one of the retardation produced by the non-dilatability of the soft parts through which it has to pass. Cases are recorded where version has been performed, and, in order to expedite the delivery, more force than usual has been employed; but the patients have died almost immediately after delivery, from either rupture of the uterus or from collapse. The forceps will frequently be of great assistance, especially in those cases wherein there is but one, or it may be two scirrhous tubercles, and these not in an advanced state. A case presently to be related, and for the particulars of which I am indebted to Mr. Butler of Woolwich, is a very fine example of their application; and even here, Mr. B. delayed their employment until the natural efforts were allowed to do their utmost to accomplish the delivery. In cases where there is such structural change, that the application of the forceps is impracticable, and where the child is indisputably alive, as proved by its movements and by the auscultatory signs, it is of great importance to determine whether we are justified in opening that child's head and destroying its life, or whether we should perform the Cæsarean section. This is a question which I think demands consideration. In many cases on record, I am of opinion that the life of the child might have been spared, if such an operation had been had recourse to; whilst several of the mothers died during labour or soon after delivery; and in others, their miserable existence was prolonged but for a few weeks."

#### TUMOURS IN THE VAGINA.

Mr. Lever treats of these under the following heads.

##### *Abscess of the Vagina.*

Mr. Lever has seen two cases of abscess in the vagina during pregnancy: both the patients were prostitutes, and both were prematurely confined: they had laboured under gonorrhœa, and had used stimulating injections: one had injected a strong solution of bichloride of mercury; the other had used the *lotio nigra*. The abscesses were opened during the time they were in labour; and in each case a considerable quantity of most fetid pus was evacuated. Probably, if an artificial opening had not been made, the uterine efforts would have sufficed to cause laceration of the vaginal wall of the abscess; which in one case was thinning in the centre; in the other case, nearer to the outlet.

##### *Polypus of the Vagina.*

Mr. Lever believes that polypoid tumours more frequently grow from the anterior than from the posterior wall of the vagina or its sides. The diagnosis of the tumours is not difficult, unless they have acquired a size sufficient to prevent the introduction of the finger to detect the part from which they spring. The treatment of these tumours, when discovered during pregnancy, should be as follows:—If they are of small size and are not likely to impede the passage of the child, and if they do not produce any untoward or urgent symptoms, they may be left until the patient is recovered from the effects of parturition; but if their size is of such dimensions, that great inconvenience and protraction of the labour is likely to result, or if there is hæmorrhage or any other unnatural symptom, their removal must be undertaken. Unlike polypus uteri, polypoid tumours of the vagina seldom, or never, become less, after labour has taken place. The former progresses with the development of the pregnant womb; while the latter, being attached to and growing from the vagina, has not that greatly-increased vascular supply which polypus uteri has in common with the impregnated organ.

Mr. Lever thinks that the best operation is the combination of the ligature and excision. This he has performed two or three times on patients who have not been pregnant; and once, on a patient six months advanced in utero-gestation.

#### ENCYSTED TUMOURS OF THE VAGINA.

These occasionally interfere with labour. They are not confined to either wall of the vagina; the anterior is as obnoxious to them as the posterior; when they form on the latter, they are likely to be mistaken for hernia, enlarged ovary, &c.; but a careful examination will readily enable us to determine their nature. When they form on the anterior wall, they have been mistaken for descent of the bladder: here also cautious examination, and the introduction of the catheter, will enable us to decide upon their seat and origin. If these tumours are discovered before labour, they may be readily dissected out entire, through the vagina: this operation, although attended with considerable hæmorrhage, is seldom dangerous; and the bleeding is controllable, by plugging the vagina. If the tumour be not discovered until the process of labour is established, an incision into it, through the vagina, will allow its contents to escape, and remove the obstruction.

#### MALIGNANT DISEASE OF THE VAGINA.

Where malignant disease is associated with pregnancy, it is a question of great moment to decide whether we ought to induce premature labour, in order that the body which has to pass the narrowed birth-passages should be proportionably small, or whether we should allow the patient to go on to the full period of utero-gestation. If the latter be decided on, we shall have to determine whether we are justified in destroying the child by opening its head, or whether the Cæsarean section should be performed. Mr. Lever is inclined to prefer the latter. If it be determined to sacrifice the life of the child, whatever be the stage of the disease, it is far preferable to induce premature labour than wait till the completion of pregnancy. If the disease be not detected until the occurrence of labour, the surgeon must determine whether the case may be trusted to the natural efforts, or whether artificial assistance is to be given.

#### TUMOURS DEPENDING UPON ACCIDENTAL CAUSES.

##### *Sanguineous Tumours or Thrombi.*

Thrombi are sanguineous tumours, which form in the labia or vagina, covered by mucous membrane, and produced by the rupture of a vein, and consequent effusion of blood into the cellular tissue. These tumours sometimes attain such a size, that, by their magnitude they impede labour. "The extravasation of the blood into the cellular tissue usually occurs at the time when the child's head is expelled; but in the only case I have seen (the one presently to be related) it occurred while the child's head was yet in the pelvic cavity, and before it pressed upon the perinæum. In such cases there is generally a small and contracted pelvis, or the child's head may be large or firmly ossified: it arises from the return of blood being prevented by the pressure of the presenting part of the child; and the pains continuing violent, the distended veins become more and more swollen, and at length the distension being increased, the vessels give way, the blood is poured into the cellular tissue, the quantity effused becomes greater and greater, the tumour proportionately increases, till at length the thrombus becomes of such a size as to impede the progress of the labour. The sudden formation of the tumour, its rapid increase, its gradual enlargement at every successive pain, and the sensation communicated to the finger, will readily enable us to distinguish between this tumour and abscess, encysted tumours, &c. If the thrombus is formed while the child's head is in the pelvic cavity, the pressure made upon the tumour during the birth of the child generally causes the mucous membrane to give way: the contents of the tumour are then evacuated: they consist of fluid

and coagulated blood, and the quantity which is sometimes let out is very considerable. In Dr. Ingleby's case, the coagula filled a pint basin; while a considerable quantity was still left, and occasioned sloughing. In a case related by Zeller, the tumour was of the size of a foetal head. I have stated, that, in many cases, these tumours form at the time the child's head is expelled, and of course cannot then offer any impediment to the labour: when, however, they form while the head is still engaged in the pelvis, where the cavity is very small, and when the child's head is large or extraordinarily ossified, more or less obstruction will be caused by the formation of such a tumour. If the mucous membrane covering the tumour give way, the greater part of the contents will be evacuated; and if the effusion be large, it will lessen the strength of the patient, especially if her powers have already been enfeebled by her lingering labour. The results of the published cases enable us to conclude that the effects of these swellings are not generally fatal, either to the mother or the child. Where a thrombus exists of a size sufficient to obstruct the progress of the child's head, an incision should be made sufficiently large to evacuate the contents of the tumour: if this is not done, the mucous membrane covering the tumour will give way, the cellular tissue will become torn and inflamed, and this inflammation will frequently terminate in sloughing.

To accomplish delivery, version was employed in one case related by Deneux, p. 23; the forceps in a case related by Siebold; the vectis was used by Zeller; and the perforator in a case related by Mr. Lever himself.

Mr. Lever also relates an interesting case of erectile tumour of the labium. He goes on to say:—"The vagina is sometimes covered with large dilated varicose veins: these rarely offer any obstruction to the progress of labour. One of the evils I have known result from a varicose state of the vaginal veins, is, that coagulation of the blood sometimes takes place, followed by inflammation and abscess, not sufficient to arrest the progress of the labour, but increasing to a very great degree the sufferings of the patient. One case of this kind I have witnessed, where the agony endured by the patient was almost insupportable. Another result of varicose vaginal veins is, laceration of one of the enlarged vessels, and consequent copious hemorrhage. To a case of this kind I was once called: the patient was delivered before my arrival, and had lost a considerable quantity of blood: bleeding was still going on, but not to a great degree. Her labour had been protracted, the mother having a small but regularly-shaped pelvis; and the child, a large, firmly-ossified head. Pressure with a dossil of lint was made over the laceration, which was not very large, and the bleeding was stayed. The patient was anæmiated for a very long period."

Mr. Lever details a case in which labour was much obstructed by *warts*. The suffering was excessive. After the labour, the soft parts became hot, swollen, and inflamed; and on the fourth day the warts commenced sloughing off, and by the seventh day were entirely separated.

#### IV. TWO CASES OF INJURY TO THE HEAD, FOLLOWED BY SYMPTOMS OF COMPRESSION PRODUCED RESPECTIVELY BY EXTRAVASATION OF BLOOD AND FORMATION OF PUS RELIEVED BY OPERATION. By EDWARD COCK.

Speaking of compression, Mr. Cock remarks:—"It is almost invariably preceded or accompanied by concussion, and may depend on various causes—on depressed bone, on extravasation of blood, or, at a subsequent period, on the formation of matter within the cavity of the cranium; or again, on a combination of these causes. When bone is depressed, the appearances of external violence will generally indicate the seat of the injury, and suggest the propriety of making a further investigation; but this is by no means necessarily the case where com-



pression arises from extravasation of blood or from suppuration. A host of difficulties then surround the case, and embarrass the diagnosis. Blood may be poured out between the dura mater and the skull, or within the cavity of the arachnoid; or it may be effused over the surface, or deeply within the substance of the brain itself. It is the last of these only that we can expect to relieve by an operation; and our success will then probably depend on the absence of any other important lesion to the contents of the cranium. The surgeon may be called on to determine, 1st, whether the compression is produced by extravasated blood; 2dly, in which of the three situations, as regards the brain and its membranes, the blood has been poured out; and 3dly, the spot where the trephine should be applied, if an operation be deemed advisable. It not unfrequently occurs, that symptoms of compression become manifested, without any well-marked local indication of the seat of mischief; that the most careful examination fails in detecting the appearance of external violence; that the history of the accident is defective in affording us the desired information; that the surgeon is thus thrown entirely on the resources of his physiological and pathological information, and must decide, from the progress of the symptoms and the effects produced on the different parts of the patient's frame, whether the mischief is of such a nature, and so located, as to admit of relief by application of the trephine.

Mr. Cock relates two cases. They are both interesting. One was that of a man who, after a fall, had stertorous breathing, &c., and paralysis of the right side, with severe scalp wound over the left parietal bone. Mr. Cock cut down but could find no fracture. He then proceeded to remove a portion of the bone above and behind the anterior inferior angle with a full-sized trephine. The moment the elevator had detached the bone, a gush of blood took place through the opening, and a clot was discovered beneath. On passing the finger into the cranium, it entered an extensive mass of coagulated blood, which extended, in every direction, as far as the finger could reach, and was evidently of considerable depth. The interior of the cranium, as far as could be felt, presented no irregularity or trace of fracture. A small quantity of the coagulum was removed with the handle of a tea-spoon, and the wound was then covered with lint dipped in water. The deep stertor of his breathing had ceased almost on the instant that the bone was raised, and he was evidently relieved by the operation. Suppuration ensued between the bone and dura mater, but the patient ultimately recovered most satisfactorily.

Mr. Cock thinks he has noticed that in every case of extravasation from rupture of the middle meningeal artery, the pure symptoms of compression are more distinctly and strongly marked than where they are occasioned by depressed bone, or effusion of blood in any other situation:—there is a death-like quietude of the limbs; the face is devoid of expression or muscular motion; the powers of the patient seem concentrated to produce the laborious heaving of the chest; while the lips and cheeks are mechanically puffed out, as the air is expelled from the mouth at each expiration. These signs, together with the deep loud tone of the stertor, are, I think, very characteristic. The pupil, also, on the same side as the extravasation, will generally be found dilated; although this was not the case in the present instance. These peculiarities may probably be attributed to the clot of blood being to a certain degree circumscribed in extent; to its great depth; and the pressure which it consequently exerts on the opposite surface of the brain, which becomes deeply impressed by it; whereas, when blood is effused into the arachnoid cavity, it is generally less in quantity and spreads over a much wider surface, producing more general and less local pressure. When extravasation takes place on the surface or within the substance of the brain, it is accompanied and indeed produced by lesion of the cerebral texture; which lesion is mostly indicated by paralysis, by irritation or spasmodic action affecting some particular part, by derangement of the pupils, or by other symptoms.

Mr. Cock adds:—A case very similar to that which forms the subject of this Paper occurred a few years ago in the hospital; and its result gave me great reason to regret that I had not trephined the patient. On making a visit to one of the wards late in the evening, my attention was attracted by the deep stertorous breathing of one of the patients; and, on inquiry, I was informed it was a man who was then under treatment for apoplexy, having been admitted, in a comatose state, that afternoon. The history was briefly this. He had been brought to the surgery in the morning, in a state of syncope, having, as was reported, fainted in the street. Some stimuli were given him, under which he speedily rallied and walked away. In the course of the afternoon he was again carried into the hospital, in a state of complete coma with apoplectic stertor. The usual treatment—bleeding, calomel, &c.—had been practised without relieving his symptoms, and he was evidently in a hopeless state. The details of the case and the general appearance of the patient, induced me to suspect that he might be labouring under extravasation of blood beneath the cranium, the consequence of injury produced by a fall, the result of accident; and not, as had been supposed, the result of cerebral effusion. On examining the head, I discovered a slight bruise on the right temple; and determined to cut down on the bone in that direction, on the speculation of finding a fracture. However, after exposing the angle of the parietal bone, no trace of fracture was discoverable, and I did not feel justified in proceeding further. He died in the course of a few hours; and, on examination, a minute fracture, hardly discernible on the exterior of the cranium, was found to traverse the lower extremity of the parietal angle. A large clot of blood had accumulated between the dura mater and the skull, poured out from the ruptured meningeal artery. There was no other injury whatever to the contents of the cranium.

Mr. Cock relates another case in which, after a kick from a horse, the frontal bone was fractured immediately above the nasal process, and a portion of brain escaped. There were no unpleasant symptoms for a fortnight, when the lad became comatose, and the wound was dry and unhealthy. This was succeeded by fever, irritability, screaming. On the 20th day, he became hemiplegic on the left side. The loss of motion and sensation was complete in the upper extremities. The paralysis of the leg was less decided in character: the mouth was drawn to the right side. There was occasional convulsive twitching of the muscles of the arm and face. At times, he appeared to be labouring under all the symptoms of compression, but at intervals was perfectly sensible. He had been salivated. He was leeches.

Next morning, the convulsive attacks, which had manifested themselves the day before, were renewed with increased violence. The muscular spasm and twitchings of the left arm and left side of the face became incessant and intense: his pulse quick and feeble, but irregular. These symptoms continued, without intermission, for some hours; and in the afternoon, the chances of his recovery seemed hopeless, unless some relief could be obtained.

“As the progress and nature of his symptoms were such as indicated the formation of matter either within the substance of the brain or between the membranes, I determined to make an attempt to discover the seat of mischief, by removing a portion of the frontal bone. With the Hey’s saw, I cut through the bone, in two convergent lines carried upwards from the track of the fracture for about the length of an inch, where they met. A triangular piece of the os frontis was thus removed, just on the right side of the median line. The dura mater, which was now exposed, bulged slightly forwards, and was devoid of pulsation: I divided it freely, by a crucial incision. A small quantity of semi-opaque, dirty-looking serous fluid appeared to escape from under the membrane; but its character and quantity could not be very accurately ascertained, as it became mixed with blood from the dura-matral vessels. The surface of the brain, now brought into view, was disorganized and broken up, apparently in that stage of softening and disintegra-

tion which precedes the formation of an abscess. I passed a director for a short distance through the pulpy tissue, in hopes of discovering a collection of pus: but failing in this, considered it best to abandon the search, and remain satisfied with having removed any impediment that the bone might have offered to the future escape of the fluid, trusting that Nature would now accomplish the rest. The wound was covered with warm-water dressing. He complained loudly during the operation, which seemed to have the effect of rousing him from his stupor. Shortly after, he again became convulsed; and his left arm, the left side of his face, and chest, continued to be violently agitated for about two hours: he then became tranquil: and had had no relapse when I again saw him, at 11 o'clock the same evening.

By the 24th day, healthy-looking pus was discharged from the opening in the brain. By the 26th day, he could move the left arm and leg freely. Feverishness now came on again. On the 29th day there appeared swelling of the left upper eyelid. It was evident that the eyelid was protruded by a collection of fluid within the orbit, and situated behind the tarsal cartilage, as there was no infiltration into the cellular texture of the lid itself. A free incision was made through the tarsus, which allowed the escape of a quantity of matter similar in character to that which had been evacuated from the opening in the brain. The symptoms of irritation speedily subsided; and the next day, on introducing a probe through the opening, I could distinctly feel a fissure extending across the roof of the orbit, through which the matter had probably found its way from the cavity of the cranium. A fungous cerebri, which formed, was repressed by gentle pressure aided by an occasional touch of caustic, and the patient got quite well."

Both these cases are creditable to Mr. Cock.

#### V. OBSERVATIONS ON URINARY CONCRETIONS AND DEPOSITS; WITH AN ACCOUNT OF THE CALCULI IN THE MUSEUM OF GUY'S HOSPITAL. By GOLDING BIRD, A.M., M.D., &c.

Of Dr. Bird, it is not necessary for us to speak. We have ever been happy to express our high opinion of his talents and acquirements. He has but to work steadily and quietly, and his place as a chemical physician is sure to be a very high one.

It is now a quarter of a century since Dr. Marcet published an account of the urinary calculi, in the museum of Guy's Hospital. It then contained 228. During the last twenty-five years, this number has been augmented to 363; all of which have been divided so as to exhibit their internal structure, with the exception of 21. The great majority of the calculi added since Dr. Marcet's publication have been analysed at different periods, as they were placed in the Museum, by Dr. Babington, Dr. Rees, and Dr. Bird. In every instance the examination has not been limited to the composition of the external crust, but has been particularly directed to the chemical constituents of the ingredients composing each layer. Attention has in every instance been particularly directed to the composition of the nucleus, in contradistinction to that of the body of the concretion. This is of very great importance; for when once a few solid particles of any substance aggregate and form a mass in the bladder, they very readily induce a crystallization of oxalate of lime, uric acid, or triple phosphate; or a deposition of urate of ammonia, phosphate of lime, or other amorphous ingredient, according to the lesion of function and state of irritability or innervation present. Hence, if ever, by medical treatment, we shall be enabled to prevent the formation of a calculous concretion, or remove one already formed, it will, in all probability, be by means directed by the character of the matter which there is a tendency to deposit as a nucleus. Dr. Bird has, on this account, adopted a classification of the calculi in Guy's Hospital Museum, founded not

upon the number of alternating layers, but upon the character and composition of the nucleus. In the following Table, it must be borne in mind, that all the distinct constituents present in each concretion have not been mentioned; those only being inserted which were present in such quantity as to constitute a considerable portion of either body, nucleus, or crust of the concretion. Those ingredients, which existed in mere traces, or in very minute quantities, have been omitted; as they are rather to be regarded as accidental contaminations, and not as essential elements of the calculus. No urinary concretion, indeed, ever exists perfectly pure unmixed; for there are very few in which some traces of uric acid, or phosphates, are not observable: and even if these be absent, the colouring matter of urine or blood prevents the calculus being regarded as perfectly pure.

Dr. Bird subjoins a Table which appears to us a very valuable and useful one.

CALCULI IN GUY'S HOSPITAL MUSEUM,

Of which sections have been made, arranged according to the chemical composition of the nuclei.

GENUS I.—NUCLEUS, URIC ACID, 245.

Species I. *Calculi nearly entirely composed of Uric Acid or Urates.*

A. Nearly all uric acid . . . . .	31
Uric acid, nearly pure . . . . .	18
Stained with purpurine . . . . .	2
Contained urate of lime . . . . .	2
and ammonia . . . . .	2
urate of soda and lime . . . . .	1
oxalate of lime . . . . .	3
phosphate of lime . . . . .	1
triple phosphate . . . . .	2
	<hr/>
	31
B. Body consisting chiefly of urates . . . . .	169
Contained traces of urate of soda . . . . .	142
and lime . . . . .	22
urate of lime . . . . .	4
uric acid in the body . . . . .	1
	<hr/>
	169

Species 2. *Bodies differing in composition from Nuclei.*

A. Bodies consisting of oxalate of lime . . . . .	10
Oxalate of lime and uric acid alternating . . . . .	2
Uric acid in the body, with an outer layer of carbonate of lime . . . . .	1
Oxalate, chiefly confined to external layers . . . . .	1
Oxalate of lime in the bodies nearly pure . . . . .	6
	<hr/>
	10
B. Bodies consisting chiefly of earthy phosphates . . . . .	22
Bodies composed of fusible calculus . . . . .	14
phosphate of lime . . . . .	3
triple phosphate . . . . .	5
	<hr/>
	22

C. Body consisting of carbonate of lime . . . . .	1	1
D. Alternating calculi . . . . .		12
Body:	Crust:	
Urate of ammonia . . . . .	Fusible . . . . .	1
Oxalate of lime . . . . .	Uric acid . . . . .	3
	Fusible . . . . .	3
	Triple . . . . .	1
	Phosphate of lime . . . . .	3
Fusible . . . . .	Uric acid . . . . .	1
		<hr/> 12

## GENUS II.—NUCLEUS URATES OF AMMONIA OR LIME. 17

Species 1. *Calculi nearly all composed of Urate of Ammonia.* 7

Urate of ammonia, nearly pure . . . . .	5
Uric acid, in tubercular patches on crust . . . . .	1
Traces of urate of soda and phosphate of lime . . . . .	1
	<hr/> 7

Species 2. *Bodies differing from Nuclei,* . . . . . 9

Body:	Crust:	
Uric acid and fusible . . . . .	As body . . . . .	1
Urate of ammonia . . . . .	Uric acid . . . . .	1
	Oxalate of lime . . . . .	1
	Phosphate of lime . . . . .	1
oxate of lime . . . . .	and { Uric acid, with oxalate } . . . . .	1
Urate of ammonia . . . . .	and phosphate of lime } . . . . .	
and fusible . . . . .	As body . . . . .	1
Urate and phosphate . . . . .	Ditto . . . . .	1
of lime . . . . .		
Oxalate of lime . . . . .	Fusible . . . . .	1
Fusible . . . . .	As body . . . . .	1
		<hr/> 9

Species 3. *Nucleus, Urate of Lime.*

A. Body fusible . . . . .	1	1
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## GENUS III.—NUCLEUS, URIC OXIDE.—None.

## GENUS IV.—NUCLEUS, OXALATE OF LIME. 45.

Species 1. *Calculus, nearly all Oxalate* . . . . . 18

Uric acid in nucleus . . . . .	1
Crust, covered with opaque octohedral crystals . . . . .	1
transparent . . . . .	2
not covered with crystals . . . . .	14
	<hr/> 18

Species 2. *Bodies differing from Nuclei.*

A. Bodies consisting of uric acid or urates . . . . .	8
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Uric acid, nearly pure - - - - -	7	
covered with urate of ammonia - - - - -	1	
	<hr/>	8
B. Bodies consisting of phosphates - - - - -		13
Phosphate of lime - - - - -	6	
Triple phosphate - - - - -	4	
Fusible mixture - - - - -	3	
	<hr/>	13
C. Body compound - - - - -		6
Body :	Crust :	
Uric acid - - - - -	Fusible - - - - -	2
	Oxalate of lime - - - - -	1
Urate of Ammonia - - - - -	Phosphate of lime - - - - -	1
1. Uric acid - - - - -	} Oxalate of lime - - - - -	1
2. Oxalate of lime - - - - -		
3. Uric acid - - - - -		
Cystic oxide - - - - -		1
	<hr/>	6
GENUS V.—NUCLEUS, CYSTIC OXIDE.		
Species 1. <i>All Cystic Oxide</i> - - - - -		11
Colour, greenish blue - - - - -	1	
dirty greenish grey - - - - -	9	
fawn brown - - - - -	1	
	<hr/>	11
GENUS VI.—NUCLEUS, EARTHY PHOSPHATES. 21.		
Species 1.— <i>All Phosphates of Lime</i> - - - - -	2	2
Species 2.— <i>All Triple Phosphates</i> - - - - -	1	1
Species 3.— <i>All Fusible Mixed Phosphates</i> - - - - -	18	18
GENUS VII.—INGREDIENTS OF CALCULUS MIXED WITH NO EVIDENCE OF ARRANGEMENT IN CONCENTRIC LAYERS - - - - -		
A. Uric acid and triple - - - - -	1	
B. phosphate of lime - - - - -	1	
C. urates of soda and ammonia, with oxalate and phosphate of lime - - - - -	1	
	<hr/>	3
ABSTRACT VIEW OF NUCLEI.		
Nuclei, consisting of uric acid or urates - - - - -	262	
cystic oxide - - - - -	11	
oxalate of lime - - - - -	45	
phosphates - - - - -	21	
	<hr/>	339
Mixed calculi - - - - -	3	
	<hr/>	342

Dr. Bird has not included the fibrinous calculus of Dr. Marcet, as it must rather be looked on as a portion of dried inspissated albuminous matter exuded from an irritated kidney.

Among the other ingredients existing in calculi, in very minute quantities, and not enumerated in the Table, are, hydrochlorate of ammonia, oxide of iron, and carbonate of lime.

Calculi present the greatest possible variety in appearance; generally, however, having more or less of an ovoid figure. Of those in Guy's Museum, the urate of ammonia and uric-acid concretions are the most regular, nearly all being ovoid or circular, a few only reniform; this species never presenting any very prominent processes or projections, unless fresh centres of deposition occur on their surfaces, as when crystals of uric acid are deposited on an ovoid urate of ammonia concretion. The cystic-oxide concretions vary considerably in outline; when large, being generally oval and smooth; and when smaller, often presenting projections from their surfaces, as if they were made up of crystals radiating from a common centre; sometimes being moulded to the figure of the organ which secreted it, as shown in the curious ear-drop-like concretion. The oxalate of lime is generally most irregular, as far as the surface is concerned; although its outline is generally tolerably defined, either bearing a close approximation to an elliptic, or even a rectangular figure. The most contorted and irregularly-figured calculus is the triple or fusible, it being often a complete cast of the pelvis and calyces of the kidney; occasionally, however, it is almost regularly oval, and sometimes circular; this variation, in all probability, depending upon the position occupied by the calculus, and upon whether it had been retained in the kidney, or passed down the ureter before it had become of any considerable size. The mixed calculi, or those not presenting any regular concentric arrangement or a distinct nucleus, are often moulded to the kidney. The phosphate of lime calculus is generally smooth externally, and conchoidal in fracture, sometimes appearing as if made up of several cohering portions. The triple phosphate and fusible mixture are not unfrequently found deposited on one side of a previously-formed calculus, as if one surface only had been exposed to the urine containing the earthy salt in solution, which is then generally found under the form of elegant white vegetations.

The nucleus is usually found in the geometric centre of the calculus, or nearly so; sometimes, however, being remarkably excentric, as in some reniform concretions; and in a few, several distinct nuclei or centres of deposition are met with. In some rare instances, the concretion which forms the nucleus is found loose within the body of the entire calculus; a circumstance in all probability arising from a layer of blood or mucous having concreted around the nucleus, and on which the matter forming the body of calculus became deposited. In this case, on the whole becoming dry, the mucous of blood would be diminished to a very thin layer, and the calculus would appear to contain loose matter in it. In a few instances, calculi appear to possess no nucleus, the centre being occupied by a cavity full of stalactitic or mammillated projections, giving the idea of the external layer having been first formed, and the mammillated portions subsequently formed in the interior. This state occurs only, so far as I have seen, in uric-acid calculi. In one specimen in the collection, the central cavity is lined with fine crystals of triple phosphate, resembling the crystals of quartz so often found lining cavities in flints. Brugnatelli describes one of a similar kind.

Sometimes calculi present very remarkable appearances, as if they had been divided into segments: this, in some cases, can be explained by the attrition of calculi against each other, where several exist at once. In some, they actually appear as if they had been divided by a fine-cutting instrument; and in one, in the Museum, the apparently divided portions seem as if they had again be-

come cemented and framed in by a subsequent deposit: I confess myself quite at a loss to explain many of these very remarkable appearances."

Dr. Bird speaks highly of the assistance he has derived from the microscope. If it only aids, he observes, in the detection of a previously-overlooked deposit of oxalate of lime, it can scarcely be said to have been used in vain. A low power is sufficient for the examination of urine; a good half-inch achromatic object-glass, with a low eye-piece, is sufficient for the examination of every case of crystalline sediments.

Dr. Bird examines seriatim the different forms of calculous deposit, and offers an account of each which will repay the reader's careful perusal. He concludes the examination by some general remarks of much ingenuity and interest. He says:—"I would suggest the probability of the necessary existence of but two great classes of deposits, or diatheses in which they exist, instead of several different and distinct species of diseased action. I would venture to propose the division of deposits into two genera or classes; the first being organic, strictly the product of vital agency, not derived from without, and indebted for their origin to deranged function; the second, including those sediments which are wholly or in part derived from without, and often rather to be considered the result of wear and tear of the sane organs of the body than of active disease.

The first of these classes will include uric acid and urates, being the nearest approach to a healthy state of secretion. If, from any cause, less oxygen be eliminated, we have these replaced by the xanthic (uric) oxide; whilst, if the oxidating function of the kidney be exalted, oxalic acid is developed under the form of oxalate of lime. The tendency to an excessive elimination of sulphur will cause the replacement of uric acid, or urea, by cystine. To this category is also referrible the carbonate of lime, which I regard not as a secretion *de novo*, but a secondary product; the result of so great a state of enervation, that the bond of affinity, which in the healthy condition of the nervous system keeps firmly united the elements of urea, becomes loosened, a re-arrangement of atoms occurs, the urea becomes carbonate of ammonia, and, under the influence of ordinary chemical affinity, carbonate of lime is generated at the expense of the calcareous salts of the urine.

The second class contains the phosphates simple and mixed: the acid of these compounds may probably be really generated in the kidney by the oxidation of the phosphorus present in the fatty matter and albumen of the blood; and if so, the bases are alone derived from without. Under certain circumstances, it is pretty evident that the earthy phosphates are developed by a sort of vicarious function of the kidney; for in some few cases, in which the phosphate of lime has not been deposited in the osseous structure, as in mollities ossium and rachitis, the urine has been loaded with it. *Ceteris paribus*, of the two phosphates, the salt of lime appears more generally the result of enervation, and the magnesian combination the product of irritation.

If these views be substantiated—and I trust soon to bring evidence before the Profession of their probability—they would tend to simplify the generally-received doctrine of the existence of a series of distinct diatheses—a doctrine, of the correctness of which I confess myself by no means satisfied. To take a single instance:—If, from the mal-performance of any function, as that of the skin by the suppression of perspiration, the kidney be called upon to perform a supplementary or compensating duty, for the purpose of excreting that amount of carbon and nitrogen for which the skin is temporarily unfitted, we know that the presence of urate of ammonia in the urine is the immediate result. It is surely, then, not making too great a call upon one's imaginative powers, to conceive that, under slight predisposing causes or idiosyncrasies, this deposit may become replaced by the other organic ingredients, or even by carbonate of lime, according to the comparative amount of irritation or enervation present in the system in general or kidney





*In what proportion of cases are tubercles first deposited in the upper part of the lung?*—Of the two hundred and fifty cases, the upper lobe of one or both lungs was solely or principally diseased in *two hundred and thirty-seven*, or *ninety-five per cent.* Of the thirteen remaining cases, of which eleven occurred in males and only two in females, there were nine, or three and three-fifths per cent. of the whole number, in which both lungs were universally and uniformly diseased. Of these, eight were males, and one was a female. Of the remaining four cases, the upper lobe in three was at least equally affected with other parts. Dr. Hughes does not profess to say on what this remarkable tendency of the upper parts of the lungs to disease depends.

*At what age is phthisis most frequently fatal?*—Of persons who have died or were likely soon to do so, there were—

	Males.	per cent.	Females.	per cent.	Total.	per cent.
Under the age of 20 . . .	14	8	5	7	19	8
Aged 20, and under 30 . . .	70	41	37	49	107	43
Aged 30, and under 40 . . .	45	26	21	27	66	26
Aged 40, and under 50 . . .	39	23	9	12	48	19
Aged 50 and upwards . . .	7	4	3	4	10	4
Total Males . . .	175		Total Fem. } 75		Grand Total } 250	

Dr. Hughes concludes with these conclusions: some of which may be dubious.

1. Tubercles may be simultaneously deposited throughout both lungs, and may then present no other physical signs than those of bronchitis.

2. This diffused form of phthisis is not necessarily acute and confined to young persons.

3. This form of the complaint is, comparatively, very rare.

4. Little difference exists in the liability of the two lungs to tubercular disease, but the left is rather more frequently first affected than the right.

5. In a considerable proportion of cases (18 per cent.) the disease advances equally on both sides.

6. Tubercles are very rarely confined to one.

7. In about ninety-five of every hundred cases of phthisis, tubercles are first deposited in the upper lobes of one or both lungs.

8. When the upper lobes are not primarily or principally diseased, they are almost always affected equally with other parts of the lungs.

9. The cause of this habit of tubercles is yet to be discovered.

10. Phthisis is most fatal to adults between the ages of 20 and 30; then, between 30 and 40; and then between 40 and 50.

11. Below the age of 20 and above 50, phthisis is, in adults, not frequently, but nearly equally, fatal.

12. Fewer females than males affected with phthisis attain the age of 40.

An interesting paper.

## VII.—ON THE PROCEEDING TO BE ADOPTED IN A CASE OF INJURED INTESTINE, FROM A BLOW UPON A HERNIAL SAC. By G. ASTON KEY.

Mr. Key's attention has been directed to the treatment of these severe injuries by three fatal and two successful cases.

The accident usually occurs, either by a direct blow upon the lower part of the abdomen, or by the person being forced against some unyielding body, by which

pression ensues from extravasation of blood or from suppuration. A host of difficulties then surround the case, and embarrass the diagnosis. Blood may be poured out between the dura mater and the skull, or within the cavity of the arachnoid; or it may be effused over the surface, or deeply within the substance of the brain itself. It is the first of these only that we can expect to relieve by an operation; and our success will then probably depend on the absence of any other important lesion to the contents of the cranium. The surgeon may be called on to determine, 1st, whether the compression is produced by extravasated blood; 2dly, in which of the three situations, as regards the brain and its membranes, the blood has been poured out; and 3dly, the spot where the trephine should be applied, if an operation be deemed advisable. It not unfrequently occurs, that symptoms of compression become manifested, without any well-marked local indication of the seat of mischief; that the most careful examination fails in detecting the appearances of external violence; that the history of the accident is defective in affording us the desired information; that the surgeon is thus thrown entirely on the resources of his physiological and pathological information, and must decide, from the progress of the symptoms and the effects produced on the different parts of the patient's frame, whether the mischief is of such a nature, and so located, as to admit of relief by application of the trephine.

Mr. Cock relates two cases. They are both interesting. One was that of a man who, after a fall, had stertorous breathing, &c., and paralysis of the right side, with severe scalp wound over the left parietal bone. Mr. Cock cut down but could find no fracture. He then proceeded to remove a portion of the bone above and behind the anterior inferior angle with a full-sized trephine. The moment the elevator had detached the bone, a gush of blood took place through the opening, and a clot was discovered beneath. On passing the finger into the cranium, it entered an extensive mass of coagulated blood, which extended, in every direction, as far as the finger could reach, and was evidently of considerable depth. The interior of the cranium, as far as could be felt, presented no irregularity or trace of fracture. A small quantity of the coagulum was removed with the handle of a tea-spoon, and the wound was then covered with lint dipped in water. The deep stertor of his breathing had ceased almost on the instant that the bone was raised, and he was evidently relieved by the operation. Suppuration ensued between the bone and dura mater, but the patient ultimately recovered most satisfactorily.

Mr. Cock thinks he has noticed that in every case of extravasation from rupture of the middle meningeal artery, the pure symptoms of compression are more distinctly and strongly marked than where they are occasioned by depressed bone, or effusion of blood in any other situation:—there is a death-like quietude of the limbs; the face is devoid of expression or muscular motion; the powers of the patient seem concentrated to produce the laborious heaving of the chest; while the lips and cheeks are mechanically puffed out, as the air is expelled from the mouth at each expiration. These signs, together with the deep loud tone of the stertor, are, I think, very characteristic. The pupil, also, on the same side as the extravasation, will generally be found dilated; although this was not the case in the present instance. These peculiarities may probably be attributed to the clot of blood being to a certain degree circumscribed in extent; to its great depth; and the pressure which it consequently exerts on the opposite surface of the brain, which becomes deeply impressed by it; whereas, when blood is effused into the arachnoid cavity, it is generally less in quantity and spreads over a much wider surface, producing more general and less local pressure. When extravasation takes place on the surface or within the substance of the brain, it is accompanied and indeed produced by lesion of the cerebral texture; which lesion is mostly indicated by paralysis, by irritation or spasmodic action affecting some particular part, by derangement of the pupils, or by other symptoms.

Mr. Cock adds:—A case very similar to that which forms the subject of this Paper occurred a few years ago in the hospital; and its result gave me great reason to regret that I had not trephined the patient. On making a visit to one of the wards late in the evening, my attention was attracted by the deep stertorous breathing of one of the patients; and, on inquiry, I was informed it was a man who was then under treatment for apoplexy, having been admitted, in a comatose state, that afternoon. The history was briefly this. He had been brought to the surgery in the morning, in a state of syncope, having, as was reported, fainted in the street. Some stimuli were given him, under which he speedily rallied and walked away. In the course of the afternoon he was again carried into the hospital, in a state of complete coma with apoplectic stertor. The usual treatment—bleeding, calomel, &c.—had been practised without relieving his symptoms, and he was evidently in a hopeless state. The details of the case and the general appearance of the patient, induced me to suspect that he might be labouring under extravasation of blood beneath the cranium, the consequence of injury produced by a fall, the result of accident; and not, as had been supposed, the result of cerebral effusion. On examining the head, I discovered a slight bruise on the right temple; and determined to cut down on the bone in that direction, on the speculation of finding a fracture. However, after exposing the angle of the parietal bone, no trace of fracture was discoverable, and I did not feel justified in proceeding further. He died in the course of a few hours; and, on examination, a minute fracture, hardly discernible on the exterior of the cranium, was found to traverse the lower extremity of the parietal angle. A large clot of blood had accumulated between the dura mater and the skull, poured out from the ruptured meningeal artery. There was no other injury whatever to the contents of the cranium.

Mr. Cock relates another case in which, after a kick from a horse, the frontal bone was fractured immediately above the nasal process, and a portion of brain escaped. There were no unpleasant symptoms for a fortnight, when the lad became comatose, and the wound was dry and unhealthy. This was succeeded by fever, irritability, screaming. On the 20th day, he became hemiplegic on the left side. The loss of motion and sensation was complete in the upper extremities. The paralysis of the leg was less decided in character: the mouth was drawn to the right side. There was occasional convulsive twitching of the muscles of the arm and face. At times, he appeared to be labouring under all the symptoms of compression, but at intervals was perfectly sensible. He had been salivated. He was leeches.

Next morning, the convulsive attacks, which had manifested themselves the day before, were renewed with increased violence. The muscular spasm and twitchings of the left arm and left side of the face became incessant and intense: his pulse quick and feeble, but irregular. These symptoms continued, without intermission, for some hours; and in the afternoon, the chances of his recovery seemed hopeless, unless some relief could be obtained.

“As the progress and nature of his symptoms were such as indicated the formation of matter either within the substance of the brain or between the membranes, I determined to make an attempt to discover the seat of mischief, by removing a portion of the frontal bone. With the Hey’s saw, I cut through the bone, in two convergent lines carried upwards from the track of the fracture for about the length of an inch, where they met. A triangular piece of the os frontis was thus removed, just on the right side of the median line. The dura mater, which was now exposed, bulged slightly forwards, and was devoid of pulsation: I divided it freely, by a crucial incision. A small quantity of semi-opaque, dirty-looking serous fluid appeared to escape from under the membrane; but its character and quantity could not be very accurately ascertained, as it became mixed with blood from the dura-matral vessels. The surface of the brain, now brought into view, was disorganized and broken up, apparently in that stage of softening and disintegra-

bowel is subject. The interval of ease that sometimes follows the blow, will not be taken as evidence of the bowel having received no lesion; for it seems, that until the peritoneum suffers from the presence of irritating matter, liquid or gaseous, upon its surface, the constitution does not take alarm. In the most severe injuries, when the rent in the bowel is extensive, and the fecal effusion almost instantaneous, the symptoms at once assume a character too marked to be mistaken; and the only mode of affording relief, namely, that of at once opening the hernial sac, is obviously pointed out. When the opening is so small as to prevent, for a time, any escape of the contents of the intestine, there is no necessity for any decisive step being taken, until called for by the unequivocal collapse and pain that attends extravasation. The interval of ease, as in the case of Jones, may lull for a time all suspicion as to the occurrence of rupture: but when extravasation begins, and not before, the surgeon's interference is called for; and no time should then be lost in affording an outlet to the offending fluids.

#### VIII.—CASE OF IRIDEREMIA, OR ABSENCE OF IRIS; WITH OBSERVATIONS. BY JOHN FREDERICK FRANCE.

*Case.*—Mary Hampton, aged 23, an out-patient at Gay's Hospital.

She is not aware of any other member of her family having been afflicted with complaint of the eyes; but has often heard from her parents (both now dead) and friends, that she was born with a defect of those organs. She herself has no recollection of ever having enjoyed more perfect powers of vision than at present; nor can she call to mind having suffered from any inflammation in the eyes, more important, or of longer duration than that which has accompanied other and more general catarrhal symptoms. During her infancy, and again six or seven years ago, her mother took her to the Moorfields' Infirmary; where the use of glasses was suggested—advice which she has not followed. The only occupation she has been fitted to pursue is that of household work.

*Present State.*—She is free, and ever has been, from any pain in the eyes, except that produced by exposure to strong light, which she cannot bear. Sunshine, in particular, is disagreeable to her, and produces profuse lachrymation: she therefore shuns it, preferring the dusk, when she can see better, and in comparative comfort. Objects are only distinctly seen when within the distance of a foot or two.

To the observer she presents the following appearances:—the eyelids are habitually more than half closed, and, from the permanence of this state producing an approach to entropion, and the shortness of the ciliæ, she bears, at first sight, the aspect of an individual who has been deprived altogether of eyelashes by disease. Such, however, is not the case; but, with the exception of slight catarrhal ophthalmia, the lids are healthy.

The globe of each eye is affected with an almost unceasing oscillatory movement in a horizontal direction: a symptom which, added to the spasmodic contraction of the orbicularis muscle, immediately excited on attempting to expose the eye to a good light, renders accurate observation of the condition of the deeper structures a matter of very considerable difficulty. The power of directing the eye towards an object, more particularly upwards or downwards, is much impaired.

Each cornea is partially clouded; the haze of the left occupying perhaps one-eighth of its superficies, and very slight: that of the right being more dense, nearly traversing the cornea horizontally, and rendering obscure about one sixth of its surface. These are, of course, the relics of former inflammation.

The sclerotic coats are moderately healthy—perhaps rather more blueish than usual: their degree of tension is that of health. On inspecting the right eye

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hypochondriac, and parts of the right lumbar, and umbilical regions, and of the *acrobiculus cordis*, are occupied by a large rounded tumour, the surface of which is quite smooth. It is moderately firm, and gives a very perceptible sense of fluctuation on percussion.

The pain augmented after his admission. On the 29th of January, an extremely fine exploring trochar and canula were passed into the tumour. No fluid escaped; but a fine probe, introduced through the canula, demonstrated that the tumour was full of fluid, as the probe passed without any obstruction for three or four inches beyond the canula's point. Although no fluid came through the canula, yet, when it was withdrawn, on passing the trochar again through it to clean it, a small plug of thick mucous fluid was forced out, which led to a speculation, whether the tumour might not be an enlargement of bowel, and this portion of thick mucous have proceeded from its lining.

The patient gradually declined. At 4 P. M. of the 11th of February, he complained of great pain over his whole body, which he compared to cramp. At 9 P. M. he expired.

*Dissection.*—The body, was emaciated, and the abdomen greenish. The serous cavities of the thorax seemed quite healthy. The peritoneum contained much muco-purulent secretion, which was evidently ropy, and mostly tinged with blood. About the spleen it was more watery; and above the liver, on the right side, very puriform. At this part, the diaphragm was extended, and thin, and coated (inferiorly) with thick, rugose, soft, adherent fibrin, which also covered parts of the liver. The omentum was contracted into a band resembling a large, pale, soft pancreas, and reaching to the right ilium. A great flaccid cyst adhered feebly but extensively to the anterior walls of the abdomen, and was in great part surrounded by hepatic substance; one acute margin of the liver being near the right iliac fossa. All the liver, to the left of the round ligament, was unaltered in structure: but it was thrust too much to the left. Much of the obtuse edge retained its form and place; but the remaining portion was pale and coarse in texture.

The cyst above-mentioned was more than half full reddish, ropy, opaque secretion, about two large wash-hand basins full; with a copious sediment, as of a very puriform, semi-solid mucous, more or less in detached masses, variously tinted. The walls of the cyst were nearly a quarter of an inch thick; consisting of indurated liver and rather œdematous tissues, somewhat lacerable in a few points. One part nearly in front of the right kidney appeared to have given way before the inspection; and others gave way in the progress of separating adhesions which were of different degrees of firmness, but partial. The interior of the cyst presented many slight septa, in the form of flat folds, or sharp crescentic ridges, some four or five inches long and an inch in height. The lining had somewhat the appearance of a soft, rough cuticle. Parts of the wall involving the liver, seemed softened, and tending to suppuration. The fundus of the gall-bladder, expanded, thick, œdematous, and still reticular, formed the anterior parietes, and was about equal in superficial extent to a pint basin; and it was separated in part from the rest of the cyst by some of the crescentic septa above described.

Dr. Babington remarks:—"It did not appear in this case what had been the cause of obstruction to the cystic duct. No gall-stones were found; nor was there any trace of bile in the contents of the cyst. Whatever may have been its cause, I conceive that an inflammation had been set up in the gall-bladder: which led to the pouring forth of the mucous proper to the viscus, and ultimately, as suppuration advanced, of the fluid and semi-solid muco-purulent matter which has been already described."

We rather think there have been two or three cases recorded not very dissimilar to this. In one case a puncture was made by mistake into the distended gall-bladder. But in point of capacity this gall-bladder is probably unique.

## REPORT OF CASES AT THE CHESTER GENERAL INFIRMARY. DURING THE YEARS 1833, 1839, AND 1840. BY THOMAS BEAVILLE PEACOCK, ESQ.

One principal point mooted in this Report is Fever.

The total number of cases of fever admitted in the years 1838, 1839, and 1840, were 53, 57, and 67, respectively, and the deaths 6, 9, and 9; the proportion thus afforded being 1 death in  $7\frac{1}{2}$  patients, or 13.6 per cent. Of the cases admitted, 86 were males, 91 females; of the 24 fatal cases, 13 were males, and 11 females; the proportion of mortality was therefore 14.3 per cent. in males, and 15.1 in females. The average period of residence in the house of the cases cured was 25.4. days; the longest having remained 67, the shortest only 7 days. Of the cases proving fatal, the mean period of death was the nineteenth day from the commencement of the symptoms; the earliest having taken place on the sixth day, the patient being cut off by a suppression of urine coming on at the commencement of maculated fever during convalescence from acute rheumatism; the latest death was on the fifty-second day, the patient dying gradually exhausted by intestinal disease.

The ages of 157 patients admitted with fever were—

Under 10 years of age,	-	-	-	-	-	-	2
From 10 to 15	-	-	-	-	-	-	16
“ 15 to 20	-	-	-	-	-	-	36
“ 20 to 30	-	-	-	-	-	-	63
“ 30 to 40	-	-	-	-	-	-	20
“ 40 to 50	-	-	-	-	-	-	10
“ 50 to 60	-	-	-	-	-	-	2
“ 60 to 70	-	-	-	-	-	-	7
Above 70	-	-	-	-	-	-	1
The mean age,	-	-	-	-	-	-	25.7.

The ages of those in whom the disease proved fatal were—

From 15 to 20	-	-	-	-	-	-	2
“ 20 to 25	-	-	-	-	-	-	7
“ 25 to 30	-	-	-	-	-	-	4
“ 30 to 40	-	-	-	-	-	-	3
“ 40 to 50	-	-	-	-	-	-	3
“ 60 to 70	-	-	-	-	-	-	4
Above 70	-	-	-	-	-	-	1
The mean age,	-	-	-	-	-	-	36.8.

This table shows the greater fatality of fever at advanced than at early periods of life: under 40, the average mortality having been only 10.22 per cent.; above that age, 40 per cent.

*Eruption.*—The presence of the peculiar eruption, considered by many writers both abroad and at home as characteristic of the contagious form of typhus fever, has been very uncertain in its appearance in the fever of Chester. In 1838 and 1839 it occurred very rarely, and in 1840 only in 18 cases out of 53, though throughout the course of all the cases its appearance was attentively looked for. It has been supposed that the eruption appears very early and passes away; but of this Mr. Peacock could not satisfy himself.

Mr. Peacock observes, that there would seem to be a peculiar condition of the atmosphere by which the spread of all fevers attended with eruptions is facilitated, though the specific virus on which they may depend be different: thus, in 1839, small-pox was extremely prevalent in Chester, and proved fatal amongst children who had not undergone vaccination, and attacked also many who had



brane, but without any appearance of morbid deposit. In one of these cases, which proved fatal on the tenth day, the plates of Peyer were distinct, and elevated above the adjacent mucous membrane, and on each oval space there existed six or eight elevated pimples, which felt rough to the finger, and, examined with a magnifying-glass, were found to present an open aperture at the apex, and to contain a yellowish-looking matter: considerable vascularity existed in the mucous membrane around. In another, in which death took place on the thirteenth day, it is stated that the plates were very distinct, elevated above the surrounding mucous membrane, and presenting numerous small openings on their surfaces, with larger ulcers here and there, near the valve of the cæcum. In a third, proving fatal on the sixteenth day, the plates were large, oval, and studded with openings along a considerable extent of the ileum, and near the cæcum the mucous membrane covering the whole plate was either ulcerated or so soft as readily to pull off. The vascularity in this case was distinctly greater around the plates than in other portions of the canal. The follicles did not present any appearance of solid matter in them. In four other cases the appearance of the follicles was entirely gone, and large ulcers with elevated and thickened edges and irregular surfaces occupied their places. These ulcers generally commenced a foot or two from the ileo-cæcal valve, and extended to the ascending colon. In some instances however, they commenced higher up, and in one case were confined to the colon, in the whole extent of which they were found. In the small intestines they took the shape and direction of the plates, being oval, with their long diameter in the course of the canal. In the cæcum however they were extremely irregular in shape, and in the colon extended across the gut in the course of the folds of mucous membrane, forming in some cases almost entire rings. In the eighth case, the patient dying on the fifty-second day, the small intestines were studded with ulcers about the size of a sixpence, from the commencement of jejunum to the lower portion of the colon. Their margins were depressed, and the surface smooth, and evidently in progress of healing. In several places the ulcers had perforated the intestinal tunics, and effusion of the contents of the canal into the abdomen had only been prevented by adhesion to the omentum or other portions of the viscera.

It appears from the reports of these cases during life that in one in which the plates were distinct, and had a few elevated pimples on them, with open apices, diarrhœa was present when the patient was admitted, on the seventh, and continued till his death, on the tenth day. In the next, in which the patient died on the thirteenth day, and the patches were found distinct, but with few ulcers, tenderness of the abdomen and tympanitic distension were present from the commencement of attack; and for the last three or four days three or four stools occurred daily. In the case proving fatal on the sixteenth day the symptoms were those of general prostration and some tenderness of abdomen, but evacuations were procured only by the exhibition of medicine, till the last day, when three stools took place spontaneously. In this case, it will be remembered, the ulceration was apparently commencing. In the others, which terminated between the seventeenth and twenty-second days, and in which ulcers occupied a larger or a smaller portion of the intestinal canal, diarrhœa existed for several days before death, and the indications of abdominal disease were present from the first. In one of these, a copious discharge of blood took place from the bowels on the fourteenth day; and in the one in which the ulcers had only been prevented perforating the peritonæal cavity by adhesions to the parts around, the symptoms of peritonæal inflammation took place on the ninth day. The case which proved fatal on the fifty-second day, and exhibited extensive intestinal disease in progress of cure, was characterized by repeated attacks of diarrhœa throughout its course.

Of the cases attended with the follicular disease, the average period of death was the twenty-second day; of those in which it did not exist, the eighteenth.

The same uncertainty which attended the appearance of the roseolous eruption in the cases admitted, was found to obtain in those in which the follicular ulceration was detected after death. In three of these cases the eruption was met with, and in a fourth an eruption made its appearance on the abdomen on the fourteenth day; but as it occurred at so late a period, and did not entirely fade upon pressure, it was regarded as petechial. In two cases, in one of which the roseolous eruption attended the early stage, numerous miliary vesicles appeared on the abdomen on the eleventh and eighteenth days.

The morbid appearances detected in the abdomen, independent of the disease of the intestinal canal, were, in several cases, a softened state of the spleen; in one, a deeply congested condition of the mucous lining of the pylorus and duodenum; in one, grumous blood effused in the iliac space; and an engorged state of the kidneys in three out of the four cases in which retention of urine existed, one of which presented an aggravated example of the granular degeneration. In the thorax, the mucous lining of the bronchi was often more injected than usual, and the lungs, especially at the posterior portions, engorged, more particularly where the agony had been much prolonged. The larger vessels generally contained partially coagulated blood, and the heart was frequently more or less flaccid.

Mr. Peacock hazards the conjecture that:—perhaps much of the difficulty which attends this subject, founded on the frequent occurrence of the ulceration in the fever of certain localities, and its almost invariable absence in that of others, may in some degree depend on the comparative periods at which the cases ordinarily prove fatal. Thus, in the cases recorded in this report, the average period of death was the 20 $\frac{1}{2}$ th day; and here it occurred in eight out of seventeen cases. In forty-seven dissections taking place at the Royal Infirmary of Edinburgh, and recorded by Dr. John Reid, the average period of death was the 12 $\frac{1}{2}$ th day; and here only two cases occurred. When fever proves fatal at so early a period, it is probably by the disorder of the nervous system, the secondary lesions not having had time to develop themselves.

*Scarlatina—Secondary Deposits*.—Of three fatal cases of scarlatina, in one, death took place on the first day of illness, and of course before any eruption had appeared on the skin. The patient, a boy of nine years of age, was seized in the morning, though he had felt poorly a little before, with pain of head, suffused eyes, stupor, and sore throat, and extreme prostration of strength: he died in the course of the evening. The brain was greatly engorged with blood, but presented no effusion of serum; and the lungs, more especially the left, were excessively congested at the lower and posterior part; they felt solid, and did not crepitate. Several members of the family were labouring under scarlatina at the time.

The second case was that of a girl of fourteen, who passed favourably through a mild attack of scarlet fever, with affection of the throat, till the fourteenth day, when the febrile symptoms underwent great increase, attended with pain and tenderness of the knee, wrist, and elbow joints; and she died in two days. Copious effusion of pus was found to have taken place into all these joints.

The third case, that of a boy seven years of age, was fatal from effusion into the sac of the pleura, coming on suddenly after an attack of scarlatina, by which he had suffered so little as not to be confined to bed; about three pints of fluid existed in the two sides of the chest, the heart was large for the subject, and the kidneys much engorged; the other organs very pallid.

It must, we think, be apparent that these latter were cases of genuine secondary inflammations identical in character with those which follow accidents or operations. Now, we do not see how the theory of the resorption of matter will explain cases of this description, and, if it will not, we must hesitate to apply it unreservedly to others in which it may appear more appropriate.

*Congenital Atrophy of one side of the Brain.*—This was noticed in a case of phthisis. The weight of the left side of the brain was only twelve ounces and two drachms, troy, while the weight of the right hemisphere was seventeen ounces and seven drachms; the whole brain weighed thirty-six ounces and six drachms. The atrophy implicated chiefly, but not entirely, the superior portions of the anterior and middle lobes, the parts containing the ventricles being nearly of the same size on both sides: the anterior lobe, measured along the fissura Sylvii, was on the left side one inch and seven-tenths, on the right two inches and nine-tenths. The membranes of the brain were extensively elevated by fluid, and the diploe remarkably thick, so that the inequality was not very conspicuous externally. This case was that of a nearly lunatic female, thirty-five years of age; the right leg was shorter and smaller than the left, so that she walked on the ball of the great toe, and the arm was contracted. Mr. Peacock has since seen a case in which, from the similarity of the deformity and flattening of the opposite side of the skull, he has no doubt a similar atrophy of the brain existed.

*Fracture of the Cranium.*—Of the four cases in which fracture of the bones of the skull occurred, in two the fissures extended across the petrous portions of the temporal bones on both sides, in one it took the same course on the right, and in the fourth on the left side. In one, a boy, who had been thrown from a horse, and dragged a considerable distance along the pavement, by his foot catching in the stirrup, the sphenoid bone was also found loosened from its connexions. In two of these cases the lateral sinuses were lacerated on both sides, and had led to very extensive extravasation of blood; and in another the same vessel was torn on the left side, a large opening existed into the longitudinal sinus at its point of bifurcation, and the middle cerebral artery was ruptured. In all the brain was extremely disorganized. In two cases bleeding from the ear occurred after the accident. In one of these a small portion of bone was found entirely separated, and raised up immediately over the internal ear, so as to allow fluid freely to pass through it; in the other the fissure was wide apart, and in this instance serum also escaped during life from the ear, and the collapsed and loose condition of the arachnoid, presented on examination after death, showed that it had escaped from beneath that membrane. One of these cases, the last, died about an hour and a half after admission, the patient having been sensible after recovering from the shock of the accident till immediately before his death. Two others lived eight and twelve hours respectively, and were insensible throughout. The fourth rallied from the first effect of the injury, so as to become partially sensible, and survived thirty-eight hours; he was however perfectly deaf, and on examination the auditory nerves on both sides were found torn through. Two of these cases were the effect of direct violence; the others of falls on the vertex.

*Mortality of Operations.*—Twenty-one capital amputations were performed; thirteen were of the thigh, of which four were performed for accidents; two on the immediate receipt of the injury, of which one recovered; and two were secondary, and took place on the sixteenth day after the accident: both of these proved fatal. Of the nine cases which were performed for disease, two died.

Of the leg, six amputations are recorded: of these, four were for accidents, three of which proved fatal, being performed soon after the injury; the fourth, also unsuccessful, took place on the seventeenth day. The two cases where the operation was undertaken for disease, both recovered.

Of the arm, two amputations occurred: one primary, one secondary, and both successful.

The periods of death were—

2 within twenty-four hours after the operation,	
1 on the 8th day.	1 on the 17th day.
1 " 11th day	1 " 28th day.
1 " 14th day.	1 " 30th day.

In one of the fatal cases the patient proceeded favourably till the end of the third week, the stump being then nearly healed. In one, secondary hæmorrhage came on on the twenty-eighth day, when the stump, with the exception of a small sinus over the bone, was healed; the femoral artery was tied, and the patient ultimately recovered. In four of the fatal cases a careful examination of the body was instituted: in two, purulent accumulations were found in the knee-joint of the amputated limbs; in a third there was combined with these a similar abscess in the elbow of the opposite arm; in the fourth, matter had formed near the trochanters and on the surface of the ilium. In two other cases of external injury, one a comminuted fracture of the leg, and the other a bruise of the knee, both followed by diffuse inflammation, purulent deposits were detected in the lungs.

A highly creditable Report.

### MEATH INFIRMARY.

#### MALIGNANT DISEASE OF THE EYEBALL SUCCESSFULLY REMOVED BY EXTIRPATION. By Dr. BYRON.\*

Richard Donnelly, a labourer, aged 21, was admitted into the Meath Infirmary, on the 4th of March, 1827. His left eye was affected with cataract, and with what appeared to be amaurosis; the conjunctiva was extensively chemosed, and the eyeball somewhat enlarged; the inflammation and lachrymation inconsiderable. He complained of headache, his pulse was 60 and full, his general health good; he had had no vision in the eye for a year; the other symptoms were only of a week's standing, and had been produced by striking the eye against a stick.

Three weeks afterwards it was deemed expedient to perform the operation for staphyloma, which was done on the 27th of March.

The sclerotic and choroid coats were divided three lines behind the ciliary ligament, and a large segment made of the ball, which included within it the lens in an opaque state, with its capsule and the iris, there was considerable bleeding, and some coagulated blood found its way into the anterior cells of the vitreous humour. There was much pain after the operation. The wound discharged pus and bloody matter in moderate quantity, and for some days the swelling appeared to be gradually diminishing; about a month, however, after the operation, the report was, that the wound had filled up, and the eye was as large as ever, having an uniform fungous aspect.

Nine months afterwards, he again presented himself; the tumour had increased in size very considerably within the preceding three months, and was then as large as a middle-sized orange. Its circumference at the base, measured nine inches, in the centre seven inches and a half, and at the top six inches; the eyelids adhered to its surface through the medium of the conjunctiva, which was moveable upon it. The anterior surface of the tumour presented an irregular aspect, from the existence of three protuberances upon it, each about the size of a walnut. The most prominent was of a dark purple colour, and bled when touched; the others were less vivid. The tumour was firm, elastic, and in some places hard; it had discharged as much as a pint of blood at one time; the general health was somewhat impaired.

\* Dublin Medical Press, April 20, 1842.

The disease advanced with rapidity; in a fortnight's time the tumour had much increased in size, and had begun to ulcerate; the tendency to hæmorrhage appeared to have ceased; for the first time, severe pain was complained of in the tumour shooting to the back of the head. The pulse was 80, and the general health, though impaired, had not materially suffered.

The operation of extirpation of the globe was performed on the 28th of February, two years from the original commencement of the disease.

*Operation.*—An incision, an inch and a half in length, was made from the external commissure to the external angle of the orbit. An incision was next carried through the conjunctiva, along the margin of the under eye-lid, from the inner to the outer angle, where it joined the first incision; a similar division of the conjunctiva was then made along the border of the upper eyelid.

The surface of the tumour was now completely exposed all round, as far as the margins of the orbit. The tendons of the superior and inferior oblique muscles were then divided, so as to allow the finger to be passed freely round the orbit in all directions. The remaining attachments of the tumour, which were extensive, were afterwards divided, and the diseased mass, which was of great size, its posterior half filling up the orbital cavity, was removed.

The os planum was perforated, the edges were rough. There was some hæmorrhage from the ophthalmic and infra-orbital arteries, which was stopped by filling the orbit with lint.

*Examination of the Tumour.*—There was no appearance whatever of the lachrymal gland, and scarcely a vestige of the healthy eye; in place of the eyeball was a fleshy firm mass, on the surface of which ran the muscles, which were considerably increased in size. Beneath these was a strong tendinous coat, apparently the sclerotic, extended and altered in its nature; on stripping this off, the surface of the tumour was exposed; the whole surfaces presented numerous tubercles of various sizes, from the dimensions of a pea to that of a chesnut, the larger being of a blackish colour, the smaller of a light brown. Between these tubercles was interposed a white semi-cartilaginous substance; the larger projections, on being divided, gave exit to a matter resembling the pigmentum nigrum of the choroid coat, and were composed of a more dense structure of the same nature. The smaller tubercles presented an aspect of the same sort, but lighter in colour; some were firm to the touch, others soft, the largest one being generally softest. The optic nerve was sound, but narrowed near its junction with the eye.

As to the termination of the case, it progressed favourably to a satisfactory cure. On the 10th day all fever had disappeared, and on the 88th day, the wound was completely healed, and the appearance of the parts good. There was a slight natural secretion from some small portions of the conjunctiva, which had remained adherent to the tarsal cartilages. He was discharged *cured*, and continued well, and perfectly free from any return of his complaint, for nearly four years afterwards, when he was carried off by a *fever*.

## NEW-YORK HOSPITAL.

ON POLYPOUS TUMOURS OF THE NASAL FOSSÆ. By J. WATSON, M.D., Surgeon to the New-York Hospital.\*

Dr. Watson, in his able *Memoir*, arranges the various forms of Polypus in order:—1st, the soft or mucous polypus; 2d, the polypus from hyper-

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\* *Amer. Journ. Med. Sciences*, April, 1842.

trophy, induration and infiltration of the mucous and sub-mucous tissues; 3d, the fleshy polypus or caruncular excrescence; 4th, the fibrous polypus; 5th, the gelatinous polypus; 6th, the carcinomatous polypus. There are also on record, cases of lipomatous tumours originating within the nostrils, and some allusions have been made to osseous polypi, and to others supposed to depend on a scorbutic, scrofulous or venereal affection of the general system.

*Seats of the Disease.*—A knowledge of the exact points within the nasal fossæ, and other cavities at which these several polypi are most frequently attached, and of the form and extent of such attachment, is of much practical importance. Sir Astley Cooper states, that he has never seen a polypus growing from the membrane covering the septum narium. Mr. Sharp long ago observed that “they all arise from the membrane spread upon the laminæ spongiosæ.” Mr. S. Cooper and others place their point of attachment between the turbinated bones near the orifice of the maxillary sinus; and Sir Astley Cooper and Professor Chekus, upon that portion of the Schneiderian membrane which is situated on the same side with the turbinated bones. Others, especially among the other writers, admit that they may adhere at any point within the nasal fossæ.

The points of adhesion for the first two forms of polypi, are probably confined to the tissues lining the external and upper wall of the nostril, and the maxillary sinus. The seat of the third form is, perhaps, not so strictly limited, its most frequent attachment is near the external orifice of the nostril, at or below the turbinated bones. The fourth form is equally indefinite in its point of attachment. It is most frequently found near the posterior nares; it may arise in the posterior fauces, immediately behind the top of the septum, and probably from the septum itself. The fifth form, or the gelatinous polypus, as already shown, may arise in the maxillary sinus, and in its progress form adhesions within the sphenoidal and ethmoidal cells, along the spheno-maxillary fissure, and on the floor of the nostril. Finally, the carcinomatous polypus, though frequently arising on the nasal surfaces of the upper maxillary bone, is restricted to no definite point of attachment; it is rarely or never pedunculated, but in its progress it attacks every part alike. Besides the situations above specified, there are cases on record, showing that polypous tumours may originate in the frontal sinuses, on the inner surface of the nasal bones and ossa palati; the under surface of the os unguis; within the cells of the ethmoid and sphenoid bones; at the side of the pharynx, at the base of the tongue, and in the upper and anterior part of the œsophagus; not to mention various remote parts of the body.

*Diseases likely to be confounded with Polypus.*—“1st. Chronic Coryza, or inflammation and thickening of the pituitary membrane, and of the cellular tissue immediately beneath it. Several instances in which this disease has been confounded with, or mistaken for polypus, have fallen under my own observation; in some of which the polypus forceps had been employed, and the patients subjected to needless and severe laceration of the pituitary membrane.

2nd. Follicular ulceration of the mucous surfaces, an affection analogous to, or identical with the follicular disease which sometimes attacks the external surface of the nose, constituting the scrofulous form of *noli me tangere*. In one of the few examples of this, which have fallen under my own observation, the disease had at one period been supposed to depend upon a polypus.

3rd. *Ozæna*, whether the result of scrofula, carcinoma, or syphilis, especially in its early stages, prior to the exfoliation of the bones and cartilages, and before the factor becomes so manifest, as it usually is in the advanced stages of this disease. In one of the cases already reported, before the tumour was detected in the nostril, the disease had been confounded with *ozæna*.

4th. An unusually large projection of the free border of the lower turbinate bone has, in more than one instance, been mistaken for polypus. The mistake is most likely to occur when this projecting edge is rendered still more prominent by thickening of its mucous envelope.

5th. An inordinate distortion of the septum, causing a projection into one of the nostrils, and obstructing the passage of air through it, has occasionally been mistaken for polypus. M. Velpeau refers to a case of this sort, in which a portion of the septum was mistaken for a polypus, and literally torn away by means of the forceps. I have at present, under care, an hospital patient, in whom a similar mistake, on the part of the physician, resulted in ulceration of the septum, and final exfoliation of the vomer and part of the cartilaginous partition of the nostrils.

6th. A hernial protrusion of a part of the brain and of its envelopes, may descend into the nostril through an opening in the cribriform plate of the ethmoid bone, and then be mistaken for polypus. An instance of this sort is recorded, I think, by Cruveilhier.

7th. Foreign bodies introduced into the nostril. Boyer relates an instance, in which a pea thus introduced by an infant, was mistaken for a polypus. It had germinated and expanded its roots to the length of three and a quarter inches."

1. *Mucous Polypus*.—Dr. Watson thinks that the true cause of these tumours is the accumulation of mucus within the muciparous follicles, which may occur either from a change in the consistence of the mucus itself, or from obliteration or obstruction of the ducts. In this respect they are closely allied to the sebaceous and encysted tumours of the scalp and other parts of the body, and that are usually found immediately below the skin. Dr. Watson relates a case. The polypus, when removed, might have weighed two ounces; it was of a pale flesh colour, and lobulated. The lobules were bulging on the surface, they varied much in size, and were separated from one another by bands of tolerably firm cellular membrane. They were composed of semi-transparent sacks filled with fluid, and when punctured, gave issue to a quantity of mucus similar to the natural secretion of the nostrils.

2. *Polypus from Hypertrophy of the Mucous and Submucous Tissues*.—It occurs perhaps almost as frequently as the first; and the two forms are often seen together, as in case third. In the one, however, the tumour may acquire considerable size without producing either condensation or thickening of the mucous membrane; whilst in the other this condition appears to be the starting point of the disorder.

The whole of the pituitary membrane is sometimes found in a state of hypertrophy or thickening, the result either of local inflammation or of a pruriginous irritation or follicular disease of the integuments. This condition gives rise to most of the inconveniences of polypus nasi; but unless some portion of the mucous surface becomes more developed than the rest, so as to assume the character of a tumour, the disease is not to be considered under this head.

3. *Of the Fleshy Polypus*.—This is vascular, of a florid red colour, and though not painful except when irritated, it is possessed of a certain degree of sensibility; it is less disposed to assume a pedunculated attachment than any other benign form of polypus.

4. *Fibrous Polypus*.—Dr. Watson thinks that the fibrous tumour of the nostril is invariably attached by a pedicle, quite as firm and fibrous as the tumour itself. Such, however, is not always the fact in fibrous tumours of other parts of the body. These nasal tumours, as seen projecting into the pharynx, are usually pyriform, except when altered in shape by the pressure of surrounding parts. They are frequently solitary. They sometimes acquire an enormous size, encroach upon the parts surrounding them, produce great deformity of the head and face, and lead to extensive ulceration, repeated hæmorrhage, destruction of the bones, and even to fatal consequences. The older writers, aware of the

formidable symptoms resulting from this tumour in its latter stages, were led to consider it malignant. According to M. Velpeau, it has its special origin in the fibrous tissue that invests the bones of the nasal fossæ, and that lies between the bones and the proper mucous tissue; whilst this latter tissue, according to the same author, is the special seat of the softer polypi.

5. *Gelatinous Polypus*.—What Dr. Watson means by this may be seen from the dissection of a case. "The morbid mass was found blocking up and distending the antrum, the parietes of which were burst asunder and excessively attenuated, being on the cheek not thicker than an egg-shell. The septum narium, and bony palate, were either absorbed or much distorted and attenuated. The mouth and pharynx were filled with the tumour, which also extended into the posterior part of the orbit, and through the sphenomaxillary fissure towards the left side of the head. It involved the ethmoid and sphenoid bones, the cells of which were filled with it; and extended through the latter bone to the base of the brain; but whether the upper plate of the sphenoid bone had been absorbed, or broken in the examination, could not be ascertained. The whole of the bones here, however, were softened and diseased, rather by inflammation or interstitial absorption, produced by pressure, than by degenerating into a substance similar to the tumour itself.

The disease appeared to have originated in the antrum, probably between the mucous membrane and the bone, and without involving the bone otherwise than by pressure, to have extended from this to the surrounding cavities. The morbid deposit was surrounded by a sort of imperfect capsule, with subdivisions of cellular tissue, some of these exceedingly delicate, and all of them filled with a gelatinous semi-fluid substance, of a transparent pale white or amber colour. At some points this matter was more like soft calf's-foot jelly, without any visible envelope; but here and there the tumour contained opaque grumous bloody deposits, and these were most abundant at the outer lobes of the tumour, just in front of and below the ear. The brain, except at the cella turcica, was unaffected."

We apprehend that, in this country, the term "gelatinous polypus" is commonly applied to what Dr. Watson describes as the "mucous." His gelatinous polypus seems to be malignant disease.

6. *External Polypus Nasi*.—By this Dr. Watson intends the lipoma or hypertrophy of the integument of the nose which sometimes gives an organ so prominent and jolly an appearance. It is doubtful, we think, whether this ought to be ranked with polypi at all.

7. *Carcinomatous Polypus*.—Of this we need not speak.

TREATMENT.—*Mucous and Soft Polypi*.—Dr. Watson observes that the mucous polypus, and that depending on hypertrophy, induration, infiltration, &c. of the Schneiderian membrane, are most readily and effectually removed by the straight forceps. Their most common point of attachment is on the outer wall of the nostril. For the purpose of seizing them the blades of the instrument, slightly open, should be passed gently along the nostril until they reach the base of the tumour, and there cautiously closed upon it. After one or two slight movements to ascertain that the instrument is properly applied, and that none of the normal structures are embraced in it, the surgeon, holding the blades firmly together on the neck of the tumour, rotates the instrument upon its longitudinal axis until he is satisfied that all resistance is overcome, and that the morbid mass is twisted off; and then, without relaxing his grasp, he gradually withdraws the tumour from the nostril. This done, the cavity is again to be examined, and if any part of the tumour has been left in it, or if other tumours are discovered, the process is to be repeated until all obstruction is removed. The patient usually ascertains this fact of himself, by the instantaneous freedom he experiences in breathing. The curved forceps are applicable only to such tumours as are inaccessible to the straight instrument, or where the tumour is situated so far back as to be most



easily removed through the mouth. When introduced in this way, care must be taken that the instrument do not injure the soft palate.

The treatment by puncture is in general to be looked upon as a substitute for the more efficient measures. In some cases, however, it may effect a permanent cure. It is best adapted to recent polypi, the lobes of which are few but large and unattended with thickening or induration of their investing membranes. In order to be effectual the punctures should be deep. In operating by puncture, we should first draw the tumour gently outward with the forceps, and then plunge the blade of a narrow straight bistoury through the body of the tumour toward its base, but not so far as to reach or injure the sound parts. The point of the instrument without completely withdrawing the blade, may then be made to pass in different directions through the morbid texture, or new punctures may be made at different points upon the surface. The mucous flowing from the punctures thus made very soon allows the tumour to collapse.

*Caruncular Excrescence.* The caruncular excrescence and other vascular polypi not of a carcinomatous character, when small, may be effectually treated by a few applications of lunar caustic, or any other mild escharotic, care being taken not to injure the sound tissues, especially those near the upper edge of the ala, where the parietes of the nostril are very thin. When the tumour is of considerable size, and already pendulous, it may be removed with the scissors or bistoury, its base being subsequently touched with caustic. When the peduncle of a flabby tumour is too broad to allow at once of removal by incision, the safest and most expeditious plan will be, first to apply a ligature to the base, and afterwards to separate the neck or body of the tumour by an incision at a little distance beyond this. But if the tumour be not easily brought within the reach of the scissors or bistoury, after applying the ligature tightly *en masse* upon its base, it may be left to slough. In instances of this sort it may be necessary to tighten the ligature from day to day, as practised and recommended by Heister.

*Fibrous Polypus.*—The fibrous polypus may be attacked with the forceps, scissors, or bistoury, with the loop or ligature for evulsion; with the permanent ligature *en masse* for strangulation; or simply with the fingers of the surgeon.

When the neck of the tumour is narrow, readily reached, and of a texture that can be easily separated, it may be divided with the scissors. If less accessible, or of firmer texture, the forceps will prove the most efficacious instrument. In a case of this sort, after other means had failed, Dr. Physic succeeded in casting a tape around the base of the tumour and then forcibly tearing it from its attachment. The permanent ligature in these cases requires frequently to be tightened; it is tedious and annoying to the patient: is liable to failure, especially when the neck of the tumour is large and of the same fibrous character as the other parts of it. There are instances, however, in which the permanent ligature offers advantages over every other mode of treatment, and in some cases it is our only resource.

## LUNATIC ASYLUM OF ABERDEEN.

The Medical Report for the year 1840 is before us. We have omitted to notice it before. "There are one or two points to which we may direct attention.

*Moral Insanity.*—The reporters, Drs. Macrobin and Jamieson, touch on this ticklish subject. The term moral insanity, say they, is employed to include those cases in which there is present no incoherence nor aberration of the *reasoning* powers, but merely such a degree of violent and uncontrollable passion, or of extravagant and whimsical conduct, as to render the individual dangerous,—ridiculous,—and incompetent to manage his own affairs. Though either a consequence or a precursor of some more decided modification, it is not unfre-

quently in itself a primary and persistent form of mental derangement. For as great eccentricity may exist, through all the customary vicissitudes and excitations of a long and active life, without being once overstretched into glaring and irrational incongruity; so may a state of Moral insanity continue, without assuming the more evident form of Intellectual disorder. Betwixt slight incapacity of control, and absolute confusion of ideas, the stages are ordinarily progressive and dependent; but it is quite in accordance with observation, that any one of these may acquire such a persistency, as at no time to show a tendency to merge into the still more mature modification which is its general consequent. Thus, though they have all and each a liability to progress,—eccentricity may never pass into Moral Insanity,—nor the latter into Mania,—nor Mania into Fatuity and Incoherence.

Until the existence of a moral perversion, as an independent form of Insanity be generally allowed, and its phenomena more distinctly understood, difference of opinion as to the responsibility and non-competency of individuals, will continue to arise between Medical Men, and Non-professional Juries, however unprejudiced and intelligent.

As we have given above a few of the common features of this species of derangement, we may add some of the symptoms which are premonitory of its approach. These frequently are, estrangement and perversion of the natural affections,—unusual obedience to sudden impulse,—great violence of passion,—extreme waywardness of disposition,—and restless activity of intellect. In every instance where in early life eccentricity exists, and still more especially when it is conjoined with hereditary predisposition to Insanity, all occasions of excitement should be carefully withdrawn, and habits of restraint and regularity unremittingly and judiciously enforced."

No doubt there is such a thing as *Moral Insanity*, and it would be well in many cases, for their families and the public, were these moral madmen shut up. But it is necessary for the interest of society, to look at questions of this description in the broadest point of view. If there be a practical as well as theoretical difficulty in determining on the amount of ordinary madness which should doom the lunatic to the asylum, this difficulty must be ten times greater in the case of moral madness. No broad and tangible barrier separates *that* from the usual eccentricities of human character, and it is perhaps questionable whether any man would bear a searching scrutiny into his *moral sanity*. The question is altogether one of plus or minus, and great discrimination as well as caution, are requisite to determine it in individual cases. Were the modern doctrine of moral insanity generally acted up to, what a scope there would be for oppression and abuse. The husband who desired to be quit of his wife, the wife who longed to get rid of her husband, might find the mad doctor a convenient ally, and the madhouse a convenient prison. A political opponent, an object of popular aversion might be immolated at the shrine of prejudice or passion. We had better bear the ills we have than hang over our heads so formidable a weapon as a statute of "constructive" madness of this sort.

*Hereditary Predisposition.*—Out of the seventy-three cases in the 5th table, thirty-eight could be distinctly traced either to a natural or an acquired constitutional predisposition; and out of a hundred and twenty-six cases admitted, during a period of two years, as shown in the second of the preceding tabular statements, sixty-five had originated from a similar tendency.

*Intemperance* was the chief of the physical causes, but, say the Reporters, though intemperance is frequently an exciting cause, it is likewise often merely a symptom of previous mental disorder; and this is well verified in the instances of several individuals at present in the house, in the histories of whose cases,

it is stated, that one of the first warnings appreciated by friends, was the exhibition of an unwonted predilection for ardent spirits.

*Mental Application.*—In only one case did excessive mental application appear to have been the sole cause, there being no ascertainable constitutional predisposition. Perhaps it may be doubted if this is by any means a common cause of insanity, for certainly the mind is much more liable to be over-excited and injured through the agency of the passions, affections, and other operations of the Will, than it ever is through any of the faculties of the Understanding. In almost all instances in which overstrained intellectual exertion is given as a cause, it will be found, that some one of the passions has been in a state of great and continued activity; the individual having, for example, been long agitated by some such feeling as anxiety, ambition, or a dread of disgrace. The physical excitement which commonly characterizes the incipient stage of mental derangement, is far more readily engendered by the emotions and passions, than it is by any of the intellectual operations of the mind.

*Average Period of Cure.*—Twenty-six cures have been effected in the course of the last twelve months,—of males and females the numbers being equal; fifteen of these were cases of Mania, and the remaining eleven all instances of Monomania. The majority in favour of the Maniacs will appear much more striking, when it is considered, that the Monomaniacs constitute by far the greater proportion of the admissions.

Of the seventy-three cases admitted, only forty-five were brought to the Asylum in a state affording a reasonable hope of cure; and of these, sixteen have already been discharged recovered, and six materially improved.

The average period which has been occupied in the cure of the foregoing twenty-six patients, is about twenty-nine weeks; sixteen weeks being the average in Mania, and forty-two in Monomania. The average duration of treatment in the male cases, is about thirty weeks; in the female, about twenty-seven. The average in male Maniacs is rather more than sixteen weeks, and in the female rather less; in male Monomaniacs, rather less than forty-five weeks, and in the female, rather more than thirty-eight.

Hence it may be inferred that the male are less readily cured than the female patients; and that a longer period is necessary for the treatment of Monomania, than is requisite for Maniacal cases,—or that, *cæteris paribus*, female Maniacs are the most favourable, and male Monomaniacs the least so, of our curable cases. It may likewise be taken, as a well-established observation, that patients, in whose cases treatment by removal from friends, and confinement in an Asylum has been delayed, require in general a longer period for cure, than those in which such measures have been earlier adopted.

*Attendance on Divine Worship.*—In respect to divine worship on Sundays, the question of its advantage seems to be settled; its utility in all institutions where it has been introduced, being unanimously allowed. It is not only useful as a Sunday occupation,—and without it, Sunday would be the most hurtful day in the week to the insane,—but in many cases, we have no hesitation in saying that it is positively beneficial, both in advancing the cure, and in confirming the convalescence. In general, we allow all to attend who are out of bed, and not under restraint, if they have the sole qualification of being capable of remaining quiet during the time of the short services which are performed; and this we do without much respect to the nature of the delusion. At no other time, the Reporters protest, are the insane so like rational and accountable beings.

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## Spirit of the British and American Periodicals.

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### EXTINCTION OF HUMAN RACES.

Dr. PRICHARD read a paper on this subject in the Zoological Section of the British Association, which has been printed in a separate form. After alluding to some ancient depopulation, Dr. Prichard turns to what is going on under our own eyes. Whatever, he says, were the causes which destroyed the ancient tribes, we know to what agency we are to attribute the similar fate of many nations who have perished since the historic age commenced. How many whole races have become extinct during the few centuries which have elapsed since the modern system of colonisation commenced? The Guanches, the numerous people of the Canary Islands, now exist only in their mummies, and in the traces of those arts by which they sought to procure for the dead an eternal repose, and which have proved the occasion of transporting their mummies into the museums of Europe. It would be endless to recount the names of tribes and whole nations in America who have been extirpated by the Spanish conqueror of that country. The last race that was utterly destroyed were the Charreas, of whom Dr. P. saw three surviving individuals brought to Paris and exhibited as curiosities. They were a most singular race of people, whose moral and physical character is briefly sketched by Don Felix de Azava, but of whom we have no satisfactory account, nor can we now ever hope to obtain it. The whole country now occupied by civilised nations in the New World was three or four centuries ago thickly peopled by native tribes. A similar process of extermination has been pursued for ages in South Africa, formerly the abode of numerous pastoral nations of Hottentots, a peaceable and inoffensive race, who wandered about with numerous flocks in a state of primitive simplicity, and whose descendants are now found in the miserable and destitute bushmen, condemned to feed upon vermin and reptiles, and rendered savage and cruel by the wretchedness which their Christian conquerors have entailed upon them. Wherever Europeans have settled, their arrival has been the harbinger of extermination to the native tribes. Whenever the simple pastoral tribes come into relations with the more civilised agricultural nations, the allotted time of their destruction is at hand; and this seems to have been the case from the time when the first shepherd fell by the hand of the first tiller of the soil.

To remedy this crying injustice the "Aboriginal Society" has been instituted. It numbers amongst its members individuals of great worth, eminent abilities, and no mean station. Its objects are laudable, and its proceedings praiseworthy. An essay on "The Practicability of Civilising Aboriginal Populations," may be said to represent its views.

In this paper the irreclaimability of the Indians is contested upon these grounds:—

First: Other races, amongst which, for centuries, there existed a want of civilisation, very similar to that which has prevailed amongst the North American Indians, have successfully struggled for their own advancement, and, under the development which cultivation has produced, have reached the greatest height to which human talent and industry have yet attained.

Secondly: We need not trust to this analogy, however strong, to sustain our hope that the Indians, if also favoured by circumstances, might similarly rise. We have numerous scattered examples of Indians of various tribes, which prove that the Indian mind and intellect form no exception to the law of progressive improvement which applies to the human mind generally.

Thirdly: If we proceed from individuals to assembled multitudes, we shall find, that though the opportunities have been few, and invariably very imperfect, they have, notwithstanding the disadvantageous circumstances which attended them, been amply sufficient to remove every doubt that the Indian race has all the requisite capabilities for a thoroughly organised system of social order.

Fourthly: The objection, that notwithstanding these encouraging instances, the result of past experience has generally been of a gloomy and disheartening character, may be met by evidence which shows that there have been powerful and adverse causes in operation, quite adequate to account for all the obstructed good and active evil which we have so much reason to lament, and which we are so loudly called upon to retrieve.

Fifthly: If we look to those instances in which the scheme of removal, suggested by the erroneous principle in question, has been adopted, it will be found that they have invariably been marked as total failures; and that, so far from conferring the advantages which they vainly promised, they have proved amongst the most active means for promoting the spoliation and ruin of the people.

Sixthly: It may be shown that, if the malign causes which have attached so foul a blot on the character of Europeans and their descendants in their treatment of the aborigines of America were suspended, and an opposite feeling substituted in their room, measures, neither expensive in themselves nor doubtful in their results, might easily be adopted, which would confer lasting honour on the authorities by whom they may be introduced, and great and reciprocal blessings both on the red and the white population.

We need not to go into the reasoning which, up to a certain point, seems to us conclusive. It is, we think, pretty evident, first, that the experiment of civilising the Indians has hitherto miscarried—secondly, that the Indians have not had fair play—and, thirdly, that, unless a great change occurs, their race will surely be exterminated.

The present system appears to be to induce or force the Indian to retire farther and farther into the forest. A community *settles up* to a native tribe. Its possessions are coveted. The tribe, by fair means or foul, is then induced to *remove*, the land of promise and of exile tempting no European but the fur-trader to seek it. Let the pamphlet speak to the results.

"If the Indians are removed from the neighbourhood of civilised men, will they meet with that abundance of game which was known to exist in the American forests before the European axe and the European rifle were heard amongst them? We have the testimony of various travellers to prove that this is not the case. Every credible evidence confirms the fact, that the game, especially of the larger species, has become more scarce and more wild, and consequently less attainable by those means which the Indians, unaided by European arts, can employ.

If the Indians be removed from the vicinity of their white friends, and driven to encroach upon the territories of other Indians, can we be sure that they will find those Indians ready to receive them as friends, and not regard them as pernicious intruders? Our past acquaintance with the Indian race has shown that the different tribes are very ready to engage in war with each other; that trespasses upon their respective hunting grounds have proved powerful causes of animosity. It is also well known that their wars are of a cruel and exterminating character; and it must be obvious, that if one of the contending parties can command the exclusive or much more general possession of European arms, the total defeat of the other must be certain.

If the Indians, whilst living upon their reservations, surrounded by settlers in some degree advanced in civilisation, and whilst more or less assisted by the superintendence, instruction, and counsel of those who sincerely desire their preservation and improvement, have, notwithstanding, felt the baneful influence

of those whose interest it is to injure and demoralize them, can we suppose that, when removed from such protection, they will not be followed by those whose interest in injuring will remain the same, and who will be freed from all the restraints which may hitherto have been put upon their base designs? The fact that every part of the wilds of North America, between the most western settlements of Canada and the United States to the shores of the Pacific are traversed by the traders of England and America, can leave us little room to hope that a spot can be found upon which the red man may be placed in security against the approaches and contaminations of his white enemies."

"A comparison of the descriptions given of the Indians to the west and northwest, in the narratives of the expeditions of Sir John Franklin and Captain Back, will convince us that, in the interval which elapsed between the two expeditions, the condition of the remote Indians has been rapidly declining. Disease, intemperance, famine, and mutual hostilities, have fearfully reduced the numbers of various tribes. It was unquestionably proved, during the last expedition, that by the irregular movements of the game, or from want of the ammunition by which it was to be taken, the Indians, but more especially the aged, the young, the infirm, and the females, are liable to be reduced to such a state of extreme starvation as to be driven to devour the tattered and filthy skins which they wear as an imperfect protection against the severity of a winter in which the thermometer sinks many degrees below zero—whole families are cut off by the combined influence of cold and hunger, and even cannibalism is known to have been occasionally resorted to under the pinchings of famine."

The Association propose; 1st, To give to the Indians within our provinces, in conjunction with some special but temporary protection, the fullest participation in the rights of British North American subjects, and the permanent security of their landed possessions. 2dly, That all the efficient means at present in existence for the advancement of the Indians in religion, school education and the arts of civilized life, should be encouraged, improved and extended. 3dly, That efforts should be made to bring forward and encourage successful and meritorious individuals, in the first place, by employing the system of *concours*, or competition in the schools, and also amongst those who apply themselves to agriculture and the arts; and, secondly, by appointing the individuals so selected as teachers to be distributed amongst their brethren; and in case of the discovery of more than ordinary talents, by giving them the advantages of a higher degree of instruction in the best colonial schools, or even in this country. 4thly, To form, with the assistance of the most worthy and influential chiefs, such a system of police or civil government as may both suit the Indian character, and lead to the Indian settlements becoming integral parts of the province in which they exist, like the Welsh counties in England and the Basque Provinces in France and Spain. 5thly, To extend the advantages of organization, instruction, and participation in British laws and British protection, to the Indians beyond our frontier. They will thus not only be put in the way of promoting their own security and happiness, but will also become of incalculably greater importance to us as allies, or rather as fellow subjects, for the maintenance of our frontier, and the extension of our commerce.

We can conceive no *just* objection to these views or propositions. It is no costly experiment either of property or human life that is suggested. It is a fair trial of the capabilities of Indian character under favourable circumstances, and right auspices. And, unquestionably, neither right nor favour has been hitherto extended to the aborigines.

But we confess we are not sanguine of the results. The land of the Indian is coveted by the white man, and the constant stream of emigration from Europe threatens to flow over every tract of the New World, not utterly and hopelessly desolate. What chance the Indian, tutored or untutored, has of avoiding

being whelmed beneath it, we will not venture to determine, though we fear it is but light indeed.

### PHYSIC IN CHINA AND DIET IN INDIA.

The *Lancet*\* contains an interesting notice of our friend, Mr. Martin's Report on the state of the Natives in Calcutta, and a Paper by Mr. Downing on the Theory and Practice of Medicine in China. We shall merely make a *mem.* or two from each.

*State of the Faculty in China.*—The Chinese medical men are by no means a privileged class; no examination or diploma is required; any one who has read a few medical books may practise, and the government takes no notice of him, unless he kills people in a manner different from that which the law directs. Doctors, therefore, abound in all the principal cities and towns, and every petty village has its practitioners. The fees are extremely small, except in certain instances where persons have obtained reputation by repeated success. The quacks and mountebanks are in as great abundance as in the most civilized nation of Europe. No encouragement is given to the study of medicine by the government: no schools of public instruction are in existence. In the capital alone a medical board is established, for the express purpose of watching over the health of the members of the royal family. Dispensaries are, however, to be found in the principal cities, where the poor receive gratuitous medical aid from doctors in the pay of the state. In many inveterate diseases the physicians refuse to wait upon the patients, because the disorder is declared, by the rules of practice, incurable. Whenever a sick person cannot eat rice, the physician gives up his case as hopeless; and the luckless practitioner comforts himself with the native adage, "that there is medicine for sickness, but none for fate."

So the medical profession is not more protected in China than in this country. The same political economy would seem to reign in both. A free trade in physic is the guiding principle of the Legislators in either.

*The Ecole Physiologique in China.* "The human body," so teaches the immortal work, *Ching che chum Ching*, "is composed of water, fire, wood, metal, and earth; the five elements which constitute the substance of everything. As long as the equilibrium between them is maintained, people enjoy health; as soon as one becomes predominant, sickness ensues. All diseases arise from disturbing the natural relation of these component parts, and the art of healing consists in restoring their natural relation. A physician ought, therefore, first to ascertain which of the elements has gained the ascendancy over the others, and after mature deliberation, he should endeavour to counteract its baneful effects. Inflammatory diseases arise from the prevalence of fire. Distorted eyes and mouth arise from the prevalence of wood over the metals, which contracts the muscles. Under such circumstances earth discharges its nature, its power relaxes in the interstices, the eyes become hollow, and the muscles are contorted, as may be abundantly proved from the classics."

*Chinese acumen in feeling the Pulse.*—A great many doctors amongst us can do a great deal by feeling the pulse. They can dispense with the use of their ears, and laugh at the stethoscope, yet we doubt if many of them are equal, after all, to the Chinese. The physicians of the Celestial Empire say they can distinguish by the touch no less than twenty-four different kinds of pulse; such as

the hard, soft, wiry, intermittent; and assert that each part of the body has a pulse peculiar to itself alone, and in relation to some distant organ of the body. Thus there are three pulses in the arm, called the inch, the bar, and the cubit; and the pulse at the wrist of the left hand is in accordance with that of the heart, while the pulse of the liver is to be found higher up in the same extremity; and the pulses of the stomach and of the lungs are to be found in the same positions in the right arm. By merely feeling the pulse in different parts of the body they can ascertain the seat of a disease, with the symptoms and mode of cure. They moreover, pretend that they can discover in this way, whether or not women will be blessed with children, whether the offspring will be of the male or female sex, and other equally obscure, but interesting, matters of inquiry.

*Chinese Pathology.*—The great work of Ching che chum Ching lets us into this secret. Diseases are simply yet satisfactorily classified thus:—

1. Violent and mortal fits, divided according to the causes which have induced them; as wind, cold, heat, moisture, vapour, nutriment, &c.; also suicide and accidents.

2. Indisposition occasioned by heat, moisture, dryness, eating and drinking, fatigue, &c.

3. Fevers and agues; hot, moist, dry, malignant, cold.

4. Defects in respiration, suffocation, short breath, dropsy, cough.

5. Vomiting of phlegm, pus, green and sour water.

6. Hæmorrhages bleeding at the nose, tongue, teeth, and ears; vomiting and coughing of blood.

7. Pains in the heart, head, face, stomach, &c.

8. Paralytic complaints, gout, acute rheumatism.

9. Rheumatic complaints of seven different kinds.

10. Mental disorders, insanity, madness, immoderate laughing, fits of fear, rage, trembling, &c.

11. Sundry diseases, including immoderate perspiration, sleeplessness, somnolency, lassitude, yawning, &c.

12. Diseases of the viscera, diarrhœa, dysentery, &c.

13. Ophthalmic complaints.

14. Pains in the ear, nose, tooth, mouth, jaw-bones; and also cutaneous diseases, and those of the hair.

Turn we from the Celestial Empire to *Hindustan*.

We often hear of the advantages of low diet, from those who would persuade or force their neighbours to resort to it. Poor-law commissioners, boards of guardians, &c. think Hindostan an earthly Paradise. There the poor enjoy the beau ideal of a pauper's diet, as will at once be seen.

A man, his wife, and two children, eat two maunds of rice, which cost a rupee (2s.) in the month; if very poor, they only get with it herbs gathered in the fields, and green pepper pods; salt and a little oil are procured by those in somewhat better circumstances; the middling classes eat split peas, greens, fish, &c. The ashes of various plants are often substituted for salt by the poorest of the people. What is the effect of this miserable dietary, to which some speculators wish to reduce the hard-working people of England? "Whoever has travelled much with the natives," says Dr. Hamilton, "and been witness to the *weakness of their constitution* in resisting the changes of air and water, will agree with me in saying, that those who enjoy a diet which includes animal food and strong liquors in moderate quantities, are best able to resist the influence of unhealthy climates, and the sudden change of air." "It has always appeared (to Mr. Martin) a *great mistake* to view the diet of the Bengalee as *prescribed by climate*; on the contrary, he believes it to be far below the standard required for support under all the changes of the seasons: in the hot weather and the rains, it is not



sufficient to supply the great waste ; and in the cold weather, *its poverty is alike injurious to health.*" The Bengalees are inveterately idle, and will not or cannot work hard ; they earn a penny, three half-pence, or two pence a-day. The Mahomedans have a better system of diet ; they are, therefore, on the whole, more robust, and more capable of sustaining efforts than the Hindoos. From a calculation of Dr. Duncan Stewart, it would appear that for six years the average annual mortality of the Hindoo population in Calcutta was *one in 17½* ; while in the better fed and clothed Mahomedan population, only one in 38½ died ! What have the vegetable and starvation doctors to oppose to that "remarkable fact !" 

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CONTRACTION OF THE FLEXOR MUSCLES OF THE THUMB, OR  
" SCRIVENERS' SPASM " CURED BY DIVISION. \*

The chief characteristic of this affection is an absolute incapability of using the pen, for writing, although the strength and motions of the hand remain unimpaired for all other purposes. Some authors regard it as a species of spasm ; others, as depending on paralysis ; it is generally permanent, but occasionally appears at intervals, and then is commonly brought on by long-continued use of the pen. This affection, though apparently slight, is most obstinate, and resists every method of treatment that has hitherto been employed against it.

M. Stromeyer, in one case, ineffectually divided the short muscles of the thumb. The patient refused any further operation.

The subject of the next case had suffered under the disease for fifteen years, when first seen by M. Stromeyer. The rigidity of the muscles of the ball of the thumb was not, however, present, but the last phalanx of the thumb became suddenly flexed, whenever the patient attempted to write or play on the piano.

The long flexor was not permanently contracted, nor did it impede any other motions of the hand. From the deep situation of the muscle it was not easy to divide it separately. M. Stromeyer bent the first phalanx strongly to a right angle, and at the same time turned the thumb as much out as possible ; he then passed a very small, curved tenotome underneath the tendon, and divided it. The sensibility of the thumb was very considerably diminished after the operation, but was restored, on the dorsal aspect the next day, and on the palmar aspect within a fortnight. The natural power of moving the thumb, also, returned at the latter period, and the patient was able to write or play on the piano without the slightest return of the spasm. 

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IODINE INJECTIONS FOR HYDROCELE. †

It appears that Mr. Walne has been trying this method, proposed originally by our Indian brethren. He observes :—Those parts of the instruments used which are metallic require to be guarded against the action of the iodine, by being carefully oiled beforehand, and freed from what may remain upon them, by being dipped into a solution of potassa immediately after being used. If some care of this kind be not bestowed they will quickly be corroded and injured, the affinity of iodine for metallic substances being very strong, and its effect destructive. 

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\* Provincial Medical and Surgical Journal. Feb. 5, 1842.

† Medical Gazette. March 11, 1842.

But a small quantity of fluid is required, and the apparatus may be advantageously much reduced in size. As to the trocar, I have, with great comfort to myself and my patients, for many years used one of not more than a third of the size employed by some surgeons. From 6 to 12 drachms of the following injection, the ingredients being mixed just before the operation is performed, is a sufficient quantity, and it is not material, I think, whether warm or cold water be used, though I commonly have it warm.

R Tr. Iodin. 3j. ad 3ij.; Aquæ tepid. 3x. M.

When introduced, this should be moved about in the tunica vaginalis by gentle handling, and after from three to five minutes may be allowed to escape. It produces some uneasiness at the time, but not enough to prevent a patient walking, perhaps a mile or more, immediately after the operation, with the part suspended.

#### FORMULA FOR THE INFUSION OF CHIRAYTA.

Mr. Houlton has long been in the habit of preparing this. He gives this formula.

Infusum-Chiraytæ. R Herbæ Chiraytæ, 3ss.; Aquæ ferventis ʒxvj. Macera per horas duas et cola.

This I find sufficiently strong, and it is a very valuable simple bitter: I prefer it to any we have in our Pharmacopœia. Its efficacy in a case of chronic bronchitis in an aged person whom I attended a few months ago was very decided: he rapidly recovered under its use, though this was a very severe case: the expectoration was very great, and the powers of the system very low.

There is one circumstance worth notice, which is, that this infusion will keep for a considerable time without undergoing any sensible change. It has kept good for six months during the summer months in a green-stoppered bottle.

Mr. Houlton gives a formula for a Tincture of Chirayta long followed by Reece and Co. of Piccadilly.

Tinctura Chiraytæ. R Herbæ Chiraytæ, 3ij.; Sassafras Concisæ, ʒiij.; Pterocarpi Concisi, ʒij.; Spiritûs Tenuioris, fʒxxiv. Macera per dies quatuordecim et cola.

#### PHARMACY IN GERMANY.

A good sketch of its present state, or rather of the present state of its professors, is given in the last Number of the Pharmaceutical Journal.

The Apothecaries or Pharmaceutical Chemists in Germany are officers of the government; and the laws which regulate their education and licenses to practise Pharmacy, are such as cannot fail to secure to the public the advantage of first-rate talent, and to those who have acquired this qualification, a just and adequate reward.

Those who are designed for the profession are obliged, before they become Apprentices, to undergo an examination before a commission of Pharmacy, in French, Latin, Greek, elementary Mathematics, and other branches of general knowledge. The usual term of apprenticeship is three or four years; during which period every opportunity is afforded for studying the processes in the laboratory, and the science of Chemistry, as well as the usual routine of manipulation in the shop.

At the close of his apprenticeship the student commences his labours in the university, which generally occupy about two or three years. The subjects which

chiefly engage his attention are, Physics, Mathematics, Botany, Zoology, Mineralogy, Chemistry, and Pharmacology. In some cases, Anatomy and Physiology are included; and a laboratory is attached to the university where the pupil may attend for a year or more if he feel disposed. But there is no definite curriculum prescribed by law. The student is at liberty to use his own discretion as to the manner in which he obtains his knowledge; but the rigour of the examination is a sufficient security against idleness or inattention. The subjects on which proficiency is required being stated, there is no excuse for neglecting any thing which is important.

The colleges in Germany are celebrated for the facilities which they afford for the acquisition of knowledge; and being under the immediate superintendence of government, and possessing ample revenues, the advantages of a complete education may be obtained at a very moderate expense.

A majority of the leading Apothecaries take the degree of Doctor in Philosophy; for which purpose they attend the lectures of the Professors of the Philosophical Faculty.

This distinction, however, is not necessary; and the examination for license to practise, is confined to those physical and natural sciences which have been above mentioned.

A candidate who is proved to be an immoral character is not allowed to pass an examination; or, if he has already passed, he is prohibited from practising as an Apothecary.

Having devoted six or seven years to the study of his profession, and having passed the requisite ordeal, the Apothecary in Germany finds himself in a peculiar dilemma. He has proved himself proficient in all the practical details of his business; he has received his license to practise Pharmacy, and he is possessed of the means of taking or opening a shop.

In England this would be an easy matter. He might, in the course of a few days, find himself standing behind his own counter, supplied with every requisite for carrying on a prosperous business, except one most important item—namely, customers. Unless he happen to possess the advantage of a large circle of friends and connexions, he might wait many years for a favourable turn in his fortune, and ultimately have cause to regret having embraced a profession already overflowing with numbers, and in which the majority can with difficulty gain even a subsistence.

But in Germany the case is very different. The number of Apothecaries being limited, the only difficulty after a license has been obtained, consists in meeting with a shop. This obstacle having been surmounted, anxiety is at an end, as every Apothecary enjoys ample scope for the exercise of his abilities—is protected from ruinous competition, and cannot be displaced, excepting in the event of any misdemeanour on his own part.

The average number of Apothecaries in Germany, is one to a population of 5000. In this calculation, the inhabitants of neighbouring villages are included. As the population of any place increases, and the wants of the public require an additional number of Apothecaries, permission is granted by the government to such candidates as stand first on the list, and this is the only way in which a shop can be obtained, except in the event of the death or removal of an Apothecary already in business.

The heirs of an Apothecary deceased, are at liberty to dispose of the concern as they may think proper, provided the purchaser or successor be qualified by license to practise Pharmacy.

No competition in prices is allowed in Germany, and a price list is monthly published by authority in order to ensure uniformity. The scale of profits is higher than could be obtained in this country, and any deviation is strictly prohibited, unless a certificate be produced signed by a Physician and a Magistrate, that the party is unable to pay the usual price, in which case the Apothe-

cary is allowed to use his own discretion. Town paupers are supplied at a discount of 30 per cent., which is allowed by the town.

The law is equally severe against the adulteration of drugs, or the sale of such as are of inferior quality, and every shop is triennially subjected to a rigid examination by officers appointed for the purpose, comprising a Medical Assessor, a Physician, a Police officer, and an Apothecary from a different town or district. In case of suspicion, a shop may be visited at any time, at the discretion of the above officers. The report of this examination contains minute particulars on every subject connected with the nature and condition of the stock, the number of pupils, the books and apparatus, and any incidental matters which may attract attention. No Apothecary is allowed to keep more Apprentices than Assistants.

The establishment of an Apothecary is required to comprise a shop (called *officin* or *apotheca*), a laboratory, store-rooms, and cellars, and a separate room for poisons. Each store-room or cellar must be under lock and key, and must be provided with an inventory of its contents.

The stock of herbs must be renewed annually, except foreign plants, which are to be replaced once in two years.

On the first occasion of any culpable neglect or deficiency, the delinquent is severely reprimanded; the second offence is visited with a fine, the amount of which is regulated by the circumstances of the case, and is modified by the degree of importance of the shop: if the misdemeanour be repeated a third time, the shop is confiscated, the license removed, and the party is prohibited from following the business at any future time. In this case he is allowed to sell the concern, and this is not a difficult matter, as there are always a considerable number of licensed Apothecaries waiting for such a chance.

The price of a shop, including stock and fixtures, varies from £600 to £1,400 in the towns of Germany; in large cities, an establishment is not unfrequently worth £7000 or £8000, and in some cases, they have been known to realize as much as £15,000 or 100,000 dollars. The income bears a corresponding proportion, but in all cases considerable, and fully adequate to the wants and comfort of the Apothecary.

In case of the illness or absence of an Apothecary, he is obliged to have a *provisor*, or confidential superintendent, on whom devolves the responsibility of the business.

An Apothecary who relinquishes his profession for the space of five years, and afterwards wishes to resume it, is required to pass a new examination.

The Practice of Medicine being distinct from that of Pharmacy, the Apothecary is not allowed to visit patients; but his duties consist in selling and preparing drugs, and compounding prescriptions.

Prescriptions of a powerful nature or poisonous quality are not allowed to be repeated without a fresh order from the medical attendant, and all external applications must be labelled *external*, and distinguished by a blue label.

No drastics, emetics, diuretics, or emmenagogues can be retailed except by direction of a medical practitioner; and the Apothecary is expected to satisfy himself respecting the legal qualification of the prescriber, and thus becomes responsible for every prescription which is prepared at his shop.\*

It is obvious that such a state of things may suit a country like Germany, where Government has a finger in every pie, and almost regulates the hour at which a man may go to the water-closet. But to our Island with its commercial republicanism it is totally inapplicable. Here free trade obtains in quackery at all events, if not in other things, and any man may set up to physic or to poison his neighbours, provided his neighbours of their own choice and inclination determine to be poisoned or physicked by him. Each system has its advantages

and evils. We doubt whether, on the whole, our's is not the best, at least for our *redundant population*.

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#### BLISTERING PLAISTER.\*

According to Dr. Müller, the uncertainty which sometimes attends the effects of blistering plaster, as usually prepared, may be ascribed to the circumstance of the vesicating principle remaining locked up in the tissues of the fly.

In order to obtain a plaster more uniform in its operation, Dr. Müller recommends that the cantharides be left to digest in the plaster, kept fluid at a moderate heat, for five or six hours.

I consider this suggestion of Dr. Müller's a very good one to follow: it nearly corresponds with what M. Guibourt has said on the same subject; but the prolonged digestion of the cantharides ensures the solution of the active principle more effectually than would be the case if they were merely incorporated with the plaster while still hot, according to M. Guibourt's recommendation.—*Journal de Pharmacie*.

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#### FINE WORDS IN MEDICINE.

The *Lancet* of the 26th of March, 1842, contains the following very sensible letter, which, as it is addressed to ourselves, we insert.

*To the Editor of THE LANCET.*

SIR,—Will you permit me to present to the editors of the "*Medico-Chirurgical Review*" a few remarks on the style of the Medical literature of the present day, with which I think they will agree. We laugh at the Americanisms, as we term them, which we see copied from the Yankee newspapers, but as great faults are daily committed among our own medical authors. Many of the writers in our periodicals, and even in some of our larger works, seem to have their heads so filled with French and German words and phrases, that they have quite forgotten their native English. Some there are, too, who affect the use of strange words derived or adopted from the learned languages, wishing apparently to impress us with the idea that they converse so much with the ancients, that they have forgotten that they live in these degenerate days. Now all this appears to me to be either mere affectation or excessive carelessness. There is nothing almost in all that we medical men have to say, which cannot be expressed in the copious stores of our own language. Let me give you a few examples.

In a late excellent work on the ear, three species of deafness are distinguished, as, *kophosis*, *paracousia*, and *dysecœa*. The first two I comprehended at once, but I had fairly to turn over my Greek Lexicon before I could get to the bottom (or root) of the last.

Some of our Irish brethren are particularly fond of this sort of thing, using outlandish expressions. Thus, one man uses the French word *chronicity* for *duration*, an opposite *sense* for an opposite direction; another speaks of a pulse of a *dicrotous* character; a third talks of *consensual* actions, instead of *consentaneous*, and of *retro-peritoneal* cellular tissue, when he means the tissue behind the peritoneum.

When one man wishes to express the taking of food, he cannot find a shorter way of doing it than the "ingestion of aliment;" and another, in long-winded

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\* *Pharmaceutical Journal*. March, 1842.

phrase, tells us that his patient "desires to micturate;" another lengthens the shortening of tendons by calling it *contraction*; and a gentlemen of considerable ophthalmic reputation cures near-sighted persons of their defect by means of an instrument with the euphonious and sesquipedalian appellation of the *myopodiorthoticon*! One would almost think that these gentlemen agreed with the diplomatist who gave it as his opinion, that "the use of language was to conceal our thoughts."

Hoping that you, the editors above-named, will find room to copy these few lines, and add some remarks of your own, to give them weight:

I am, Gentlemen, your obedient servant,

A PLAIN MAN.

The Plain Man knows that we have always set our face against the barbarous jargon he complains of. It is high time that a stop were put to these coinings. We got on very pleasantly without them, and understood each other and the subject as well when we spoke English, as now when we are talking in Heaven knows what lingo. Nay, we cannot help thinking that the "plain man" both understood and understand the subject better than many of the wordy writers of this new school, who raise such a dust of verbiage that we cannot see their meaning, if they have any.

The rage for manufacturing terms, and over-laying our own terse and manly language, with the periphrastic inflections of the French and German, came in with the *Cyclopædia of Practical Medicine*.

If the fashion goes on, we shall damage the character of our writings irretrievably. We have some British Classics amongst us—we shall have no more. The works of Pott or Cullen are the works of accomplished gentlemen, imbued with the genius of our tongue, and casting a lustre on our literature. The infusion of Norman and Latin and Greek tempers and mellows, while it does not emasculate, the stock of hardy Saxon, and the delighted reader rises from the simple, yet cultivated page, with his fancy engaged and his taste improved. A work of the modern school is of a different kidney. Its big mouthed phrases, long-legged idioms, and awkward progress, remind one of the graces of a May-day lord, mud on his heels, a cocked-hat on his head, tinsel on his rump, and a priggish *wiper* in his hand.

We would not, however, be mistaken. We are far from thinking our language all-sufficient. It has been built up by bits, and its character is essentially composite. But what we complain of, is the reckless and ridiculous coining of new names to express things perfectly known by the old ones—the tampering with the construction of our tongue—and the ignorance or disregard of its essentially concise and Saxon character. This is a serious evil, and unless we can repel the Barbarians, the genius of our literature will sink under their invasion.

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#### POOR LAW MEDICAL RELIEF.—NEW REGULATIONS OF THE POOR-LAW COMMISSIONERS.

The remonstrances of the profession, the decision of a parliamentary committee, and, probably, a sense of justice, tardy though it be, have at last had their effect on the Poor-law Commissioners. Some of the main grievances are to be redressed. Others still remain in abeyance, but enough has been obtained to warrant us in expecting with confidence the ultimate attainment of every just and reasonable claim.

The result of this war with the Poor-law Commissioners reads a significant but painful lesson to both parties. The Commissioners have learnt the futility of a contest with the rights and feelings of the medical profession, and they must

tacitly acknowledge the impolicy of their past course. The profession, on the other hand, have been taught the lesson which authority is constantly enforcing, that what is pertinaciously denied to justice must be conceded to clamour. This is the premium upon agitation which modern legislation so liberally holds out. The injured have but to render those in authority uncomfortable, and demands are then conceded which were previously denounced as monstrous.

The profession too have learnt the utility of a medical press. Their journals have carried this question for them. They have been the means of giving publicity to the resolutions of the bold, of encouraging the timid, and uniting all.

But to the regulations.

#### I. TENDER.

Art. 1.—It shall not be lawful for the board of guardians of any of the said unions, by advertisement, or other public notice, printed or written, to invite tenders for the supply of medicines, or for the medical attendance on any of the paupers within any such union, unless such advertisement or notice shall specify the district or place for which such supply of medicines and such attendance is required, together with the amount of salary or other remuneration fixed or approved by the poor-law commissioners, as the consideration for such supply of medicines and such attendance, or either of them.

Art. 2.—All salaries or other payments to any medical man, fixed by any of the said boards of guardians, and every contract made by any of the said boards of guardians with any medical man, in pursuance of any advertisement, or other notice, inviting medical men to tender their services at a sum or sums not named in such advertisement, or notice, shall be deemed to be fixed or made in opposition to the rules and regulations of the poor-law commissioners in force in this behalf, and all payments made towards such salary, or in fulfilment of such contract, shall be disallowed in the accounts of the parties authorising or making the same.

Art. 3 specifies the qualifications of medical officers. Henceforward every officer must possess one of the four following qualifications:—

1. A diploma from the Royal College of Surgeons in London, together with a degree in medicine from a university in England, legally authorised to grant such degree, or together with a diploma or license of the Royal College of Physicians of London.
2. A diploma from the Royal College of Surgeons in London, together with a certificate to practise as an apothecary from the Society of Apothecaries of London.
3. A diploma from the Royal College of Surgeons in London, such person having been in actual practice as an apothecary on the 1st of August, 1815.
4. A warrant or commission as surgeon or assistant-surgeon in her Majesty's navy, or as surgeon or assistant-surgeon or apothecary in her Majesty's army, or as surgeon or assistant surgeon in the service of the Honourable East India Company, dated previous to the 1st of August, 1826.

Art. 4.—Provided always, that if it shall not be practicable for the board of guardians to procure a person residing within or near the district in which he is to act, and duly qualified in one of the four modes recited in Art. 3, to attend on the poor in such district, or that the only person resident in or near such district, and so qualified, shall have been dismissed from office under the seal of the poor-law commissioners, or shall be judged by the poor-law commissioners to be unfit or incompetent to hold the office of medical officer, then and in such case the board of guardians shall cause a special minute to be made and entered on the usual record of their proceedings, stating the reasons which, in their opinion, make it necessary to employ a person not qualified as required by Art. 3, and shall forthwith transmit a copy of such minute to the poor-law commissioners for their consideration; and the poor-law commissioners may, if they think fit so to do, permit the employment by such board of guardians of any person

duly licensed to practise as a medical man, although such person shall not be qualified in one of the four modes required by Art. 3.

Art. 5.—Provided also, that it shall be lawful for the board of guardians, with the consent of the poor-law commissioners first had and obtained, to continue in office any medical officer duly licensed to practise as a medical man already employed by any such board of guardians, although such medical officer may not be qualified in one of the four modes required by Art. 3.

So the "Tender System" is given up.

## 2. AREA OF DISTRICTS.

### *Maximum Area and Population of Medical Districts.*

Art. 6.—It shall not be lawful for the board of guardians to assign to any medical officer, to be by them hereafter appointed, a district which shall exceed in extent the area of fifteen thousand statute acres, or which shall contain a population exceeding the number of fifteen thousand persons, according to the then last enumeration of the population published by authority of Parliament.

Art. 7.—Provided always, that where any medical officer may, on the day on which this order shall come in force, hold any district exceeding either in area or population the limits fixed in Art. 6, and such medical officer may have been appointed to such district for any time not exceeding twelve calendar months, he shall continue to hold his office, if not otherwise removed therefrom, up to the expiration of the time for which he was so appointed, but that where any medical officer shall have been appointed to any district exceeding the said limits in area or population for any space of time longer than twelve calendar months from the day in which this order shall come into force, the continuance of such officer in his office shall cease and determine on the 25th day of March, 1843, or whenever the term of such appointment may expire, whichever shall first happen.

Art. 8.—Provided also, that if it shall be impracticable for the board of guardians to divide any union into districts containing respectively an area and population less than is specified in Art. 6, then and in such case the board of guardians shall cause a special minute to be made and entered on the usual record of their proceedings, stating the reasons which in their opinion make it necessary to form a district exceeding the said limits, and shall forthwith transmit a copy of such minute to the poor-law commissioners for their consideration, and if the poor-law commissioners shall signify their approval thereof to such guardians, then and in such case, but not otherwise, such guardians may proceed to appoint a medical officer for the said district.

Art. 9.—Provided also, that the limits of fifteen thousand statute acres prescribed in Art. 6, shall not apply or be in force in respect to any medical district situate wholly or in part within the principality of Wales; but no medical district situate wholly or in part within that principality, shall be assigned to any medical officer residing more than seven miles from any part of the parish included within such district, unless the formation of such district shall have been specially sanctioned by the poor-law commissioners in the same manner as is directed in Art. 8.

It will generally, we conceive, be admitted that the maximum assigned to the districts is too great. Yet there is a great improvement on the old system, where caprice was the only limit.

## 3. REMUNERATION OF MEDICAL OFFICERS.

Art. 10. lays down a rate of remuneration for extra services. No salary of any district medical officer, or contract made by any board of guardians with a district medical officer, shall include the remuneration for the operations and services of the following classes performed by such medical officer in that capa-



city for any out-door pauper, but such operations and services shall be paid for by the board of guardians, according to the rules specified in this article.

1. Amputations of leg, arm, foot, or hand . . . . .	}	5	0	0
2. The operation for strangulated hernia . . . . .				
3. The operation of trephining for fractured skull . . . . .				
4. Treatment of compound fractures of the thigh . . . . .				
5. Treatment of compound fractures or compound dislocations of the leg . . . . .	}	3	0	0
6. Treatment of simple fractures or simple dislocations of the thigh or leg . . . . .				
7. Treatment of dislocations or fractures of the arm . . . . .		1	0	0

The above rates to include the payment for the supply of all kinds of apparatus and splints.

Provided that in every such case the patient survives the operation not less than thirty-six hours, and that he has required and has received several attendances after the operation by the medical officer, who has performed the same.

Provided also, that except in cases of sudden accident immediately threatening life, no medical officer shall be entitled to receive such remuneration for any amputation, or for the operation of trephining, unless he shall, before performing such amputation or operation, have obtained at his own cost the advice of some member of the Royal College of Surgeons of London, or some fellow or licentiate of the Royal College of Physicians of London, and shall produce to the board of guardians a certificate from such member of the Royal College of Surgeons, or such fellow or licentiate, stating that in his opinion it is right and proper that such amputation or operation should be then performed.

Art. 11.—All trusses furnished by a medical officer in consequence of any contract with or direction of a board of guardians, shall be charged by such medical officer at the cost price, including carriage, and be paid for accordingly by such board of guardians.

Art. 12.—The delivery of any woman in childbirth and the subsequent medical attendance upon her by any medical officer, in that capacity, whether in or out of the workhouse, shall be paid for by the board of guardians in the manner specified in this and the following article—that is to say, in cases in which any such medical officer shall be called on by order of any person legally qualified to make such order, to attend any woman in or immediately after childbirth, or shall be required, under circumstances of difficulty or danger, without any order, to visit any such women actually receiving relief, or whom the board of guardians may subsequently decide to have been in a destitute condition, such medical officer shall be paid for his attendance and medicines by a sum of not less than ten shillings, nor more than twenty shillings, as the board of guardians may determine, regard being had to the distance from the residence of such medical officer.

Art. 13.—Provided that in any special case in which great difficulty may have occurred in the delivery, or long subsequent attendance may have been requisite, such medical officer shall receive the sum of two pounds; and if any such case, any dispute shall arise between the board of guardians and such medical officer, such medical officer shall not receive the said sum until the poor-law commissioners shall have signified their approval of such payment on a report made by such medical officer and transmitted to them through the board of guardians of the said union.

The foregoing terms appear to be just and reasonable, and no objection will, we suppose, be taken to them.

#### 4. SUBSTITUTES FOR MEDICAL OFFICERS.

Art. 14.—Every medical officer appointed, or to be appointed, in pursuance of the rules, orders, and regulations of the poor-law commissioners, shall be

bound to visit and attend personally the poor persons entrusted to his care, and shall be responsible for such visits and attendances, and shall so keep any weekly return prescribed by the orders of the poor-law commissioners, as to show when the visit or attendance made or given to any pauper was made, or given by any person other than himself.

Art. 15.—Every medical officer to be hereafter appointed, shall, if practicable, within twenty-one days of the time of his appointment, name to the board of guardians some legally qualified medical practitioner to whom application for medicines or attendance may be made, in the case of his absence from home, or other hindrance to his personal attendance, and who will supply the same at the cost of such medical officer, and the name and residence of every medical practitioner so named shall be forwarded by the clerk to the guardians to each relieving officer, and to the overseers of every parish in the union.

Of course we presume that the commissioners will not enforce on the medical officer unnecessary attendance or vexatious returns. His remuneration will never be so high as to entitle the commissioners to impose on him *unnecessary* trouble. Justice, however, to them, to the poor, and to himself, demands a satisfactory one.

#### 5. MODE OF OBTAINING MEDICAL RELIEF BY PERMANENT PAUPERS.

Art. 16.—The board of guardians, shall, once in every six months, cause to be prepared a list of all such aged and infirm persons, and persons permanently sick or disabled, as may be actually receiving relief from such board of guardians, and residing within the district of each medical officer of the union, and shall from time to time furnish to each medical officer a copy of the list aforesaid.

Art. 17.—Every person whose name shall be inserted in such list, shall receive a ticket in the following form, and shall be entitled, on the exhibition of such ticket to the medical officer of his district, to obtain such advice, attendance, and medicine, as his case may require, without any order from the relieving officer, overseer, or other authority.

#### *Form of Ticket.*

_____ UNION.	
Date _____	
Good until the _____ day of _____	184
Name of Pauper _____	
Residence of Pauper _____	
Name of Medical Officer _____	
Residence _____	
Usual hour at which he is at home _____	

Art. 18.—Such medical officer shall, on the exhibition to him of the said ticket, and on application made on behalf of the party to whom such ticket was given, be held responsible for affording such advice, attendance, and medicines, as he may be bound to supply, in the same manner as if he had received in each case a special order from the board of guardians, or from any officer, to afford such advice, attendance, and medicine.

Art. 19.—Provided always that if on complaint of any medical officer it be made

to appear to the board of guardians, that any poor person who may have been furnished with a ticket in the aforesaid form shall have wilfully applied to, or sent for the medical officer on frivolous grounds, such poor person shall for the first time be admonished by the board of guardians, and on a repetition of such frivolous application, such poor person shall be deprived of his ticket, and thenceforth until the next half-yearly list be made out, shall not be empowered, except in cases of sudden and urgent necessity, to demand advice, attendance, or medicines, from such medical officer, without an order of the board of guardians, a relieving officer, or an overseer of some parish in the union.

#### 6. CONTINUANCE IN OFFICE OF MEDICAL OFFICERS.

Art. 20.—Every medical officer, duly appointed in pursuance of the orders and regulations of the poor-law commissioners, shall, unless the period for which he is appointed be expressly entered on the minutes of the guardians at the time of making such appointment, or be expressly inserted in a written contract entered into by such medical officer, and such period have been subsequently approved by the poor-law commissioners, continue in office until he may die or resign, or become legally disqualified to hold such office, or be removed therefrom by the poor-law commissioners.

We are not convinced of the expediency of such lengthened appointments. We think that it would be fairer to the medical men of a district to give them a turn in succession. We do not say that the appointment should be annual. But it might subsist for four or five years. If permanent, an interest may be generated which will make these appointments descend in families or run in narrow grooves. The son may succeed the father, or the office may be a useful part in the value of a practice sold or a partnership disposed of. Our medical brethren know best what they desire, but this is what occurs to us.

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#### IODINE FOR THE DROPSY AFTER SCARLET FEVER.\*

Mr. Copeman, of Coltishall, writes in the Medical Gazette, in reference to dropsy after scarlet fever.

"From having observed its power of strengthening the constitution, with, at the same time, a tendency to prevent inflammation and to increase absorption, I was induced to make trial of iodine. I prescribed it in the form of solution recommended by Lugol, viz.

R. Iodin. ʒj.; Iodid. Potass. ʒij.; Aquæ 3 vij. M. ft. Solutio.

Iodin. concentr.

Of this solution I ordered from 5 to 10 drops for children, and from 10 to 20 or 25 to adults, three times a day in water. In the first case in which it was used it rapidly effected a cure; in consequence of which I prescribed it in every succeeding case that presented itself, and with the same complete success."

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#### SCIRRHUS OF THE PANCREAS.†

Diseases of the pancreas are so rare, that every well-authenticated case is interesting. The following is recorded as an instance of scirrhus.

Dr. Mollan exhibited the recent parts in this case; they were taken from the body of a man aged seventy-three who had been admitted into the Whitworth

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\* Medical Gazette, April 8, 1842.

† Ibid.

Hospital, on the 28th of the preceding month. He stated, on admission, that he had been for a long time subject to pain in the stomach after eating, and that within the last six or eight months this pain had become severe and of frequent occurrence. He was considerably emaciated. He had tenderness on pressure over the epigastric region, and a tumour was perceptible, also, to the right of the umbilicus. No advantage was derived from any plan of treatment, and the man gradually sunk and died on the preceding Wednesday. About fourteen days before his death he became universally jaundiced, but had no vomiting until two or three days before death. He had been of temperate habits. On examining the stomach it was found distended with dark-coloured fluid, and its mucous coat presented marks of increased vascularity. The seat of the tumour was found to be the pancreas, the head of which appeared to be changed into a scirrhus structure; the termination of the biliary and pancreatic duct was compressed by it; the gall-bladder and hepatic ducts were greatly distended with bile of a dark-green colour; there were several tubercles in the substance of the liver, of a white colour and scirrhus structure.—*Dublin Journal of Medical Science.*

#### PREPARATIONS OF IRON.

Mr. Tyson, of Derbyshire, has published some judicious remarks on the above subject, and communicated some valuable formulæ, in the *Pharmaceutical Transactions*, some of which we shall introduce here.

Iron can have little effect on the human body unless dissolved by the acid of the stomach, or by some acid before swallowed.

"As this combination with acids is necessary, so physicians and chemists have diversified this combination a hundreds ways, and the best preparations for the purpose of medicine, are those which are easily soluble, at the same time are rendered the least disagreeable to the stomach.

With this view, spirituous tinctures have been invented; but as some take up too small a quantity of iron, and others by long keeping deposit it again, so of course these are not without objection.

With respect to other preparations of iron, I have to observe, that the filings are often productive of inconvenience and a disturbance in the stomach, with fetid eructations, from the evolution of hydrogen gas. These effects are produced in a still greater degree, by the use of even a few grains of the sulphuret of iron; sulphuretted hydrogen being given off, which acts as a poison, and consequently this preparation is not well calculated for internal purposes.

The rubigo ferri requires to be given in large doses, on account of its insolubility, and to be long persisted in: in both cases the stomach often becomes cloyed, and sickness arises before sufficient can be taken to produce the desired effect.

The subcarbonate or precipitated carbonate of the shops, is liable to the same objection, being, as I apprehend, peroxide, or mere colcothar, and but in a slight degree soluble, which is the reason why such large quantities can be occasionally taken for a dose, whereas of the carbonate of the protoxide as formed in the *mist. ferri c.*, or in the *pil. ferri c.*, two very useful preparations, from five to ten grains is generally as much as can be taken for a dose, without producing considerable stimulant effects.

The sulphas ferri, occasionally produces pain in the bowels, nausea, and vomiting, especially if taken in improper doses, or long-continued.

The most valuable preparations of iron are those which have the deutoxide for their base, as in the mineral waters, and in the formula I am about to give you:—

## LIQUOR OXYSULPHATIS FERRI.

R. Ferri sulphat. ʒij. (or ʒiij.)

Acidi Nitrici ʒiij.

Aquæ Dist. ʒiiss.

Tere diligentèr per horæ quadrantem acidum nitricum ferro vitriolato, dein sensim addendo aquam, per chartam cola, et fiant guttæ, é quibûs capiat æger gtt. v—xij. bis in dies ex infuso quassia vel aquâ.

This form, I believe, was invented by Sylvester, about forty years ago, and has ever since that time been in constant use among the practitioners of Derbyshire. I wonder it has not been inserted into the Pharmacopœia, as it is by far the best and most powerful of all the preparations of iron. The oxygen of the nitric acid uniting with the sulphate of iron, forms a persulphate; at the same time the iron is converted into red oxide. As a medicine it far surpasses the tinc. ferri mur., and it never precipitates the oxide of iron. It is one of the most valuable restoratives in the debility and torpor of the liver, which remains after the successful treatment of hepatitis. Patients do not well bear above ten or twelve drops to a dose; and when given with small doses of sulphas magnesiæ, &c., it equals the purgative mineral waters. I think it will be found to be an antidote to prussic acid, as it instantly combines with it."

## COUNTER-IRRITANTS.

The following formulæ have been communicated by Dr. Turnbull to the Editors of the Pharmaceutical Transactions.

*Tinctura Capsici Concentrati.*

R. Capsici Baccarum, ʒiv.

Spiritus Vini Rect. ʒxij.

Macera per dies septem et cola. (It may also be made with advantage by displacement.)

This concentrated tincture is used as an external application, and is found to be a powerful rubefacient and counter-irritant, for which purpose the ordinary tincture of capsicum is not sufficiently potent.

VERATRIA, dissolved in this tincture acquires increased activity; the capsicum apparently facilitating its absorption into the skin. Four grains of veratria, dissolved in an ounce of the concentrated tincture of capsicum, will be found as powerful in its effect as twelve or fifteen grains dissolved in alcohol.

*Pulvis Aluminis et Capsici.*

R. Aluminis Sulphatis, partes tres.

Tinct. Capsici concentrati, partem unam.

Misce et sicca.

A very small quantity of this powder, applied to the tonsils, is found more efficacious, in some cases, than an alum and capsicum gargle.

*Unguentum Ipecacuanhæ.*

R. Pulveris Ipecacuanhæ, ʒij.

Olei Olivæ, ʒij.

Adipis, ʒss. M. ft. unguentum.

*Unguentum Emetinæ.*

R. Emetinæ, g. xv.

Sp. Vini. Rect. q. s.

Adipis, ʒss. M. ft. unguentum.

Dr. Turnbull states, that he has found this ointment particularly efficacious as a rubefacient in pulmonary and rheumatic affections, producing little or no pain or inconvenience to the patient."

### SUMMARY OF THE MORTALITY TABLES OF LONDON FOR THE YEAR 1841.

The following brief summary is contained in the number of our northern contemporary,\* for May, 1842. It is abstracted, we presume, from the Registrar General's Report, which we have already directed attention to.

The total number of deaths was 45,284. Of these 22,995 were males, 22,288 females. 20,780 were under 15, and 24,433 above 15 years of age.

In the tables, the area is divided into five districts, and the rate of mortality is found to differ in each, according to the local situation, and the circumstances and occupations of the inhabitants. Thus, in the western district, embracing Westminster, St. James, Kensington, &c., it is 2,202 per cent.; in the northern, embracing St. Mary-le-bone, St. Pancras, Islington, and Hackney, it is 2,267; in the central, or what is properly called the city, it is 2,505; in the southern, embracing Southwark, Greenwich, Camberwell, &c., it is 2,539; and in the eastern, embracing Shoreditch, Whitechapel, Bethnal Green, &c., it is 2,558, showing a difference of 356 per cent. between the western, which is the wealthiest and best aired district, and the eastern, which includes the poorest and most low-lying parts of London, along the banks of the Thames. The average mortality over the whole, is 2,429 per cent. The central district is entirely urban, the eastern nearly so, while all the others comprehend a considerable extent of surrounding country.

The tables exhibit the number of deaths which occurred in each week, and their causes. The diseases are classed as follows: I. Epidemic, endemic, and contagious. II. Spasmodic, embracing, 1st, diseases of the nervous system; 2d, of the respiratory organs; 3d, of the organs of circulation; 4th, of the digestive organs; 5th, of the urinary organs; 6th, of the organs of generation; 7th, of the organs of locomotion; 8th, of the integumentary system; 9th, of uncertain seat. III. Deaths from old age; and IV. Deaths by violence.

The mortality from the exanthemata and typhus, amounted to 3,840, of which 1053 were from small-pox, and 1,151 from typhus—certainly a very small number, considering the extent and circumstances of the population. The deaths from consumption were 7,326, or about 16·17 per cent. of the whole, being nearly the same proportion as in the rest of the kingdom. The mortality from the other principal diseases, was as follows: Whooping-cough, 2,278; hydrocephalus, 1,739; convulsions, 2,778; pneumonia, 3,668; asthma, 1,351; dropsy, 1,720; debility, 1,114; old age, 3,373. The violent deaths amounted to 1,148. The mortality in the first quarter, amounting to 13,713, far exceeded that in the others, which differed little in this respect, being 10,404, 10,406, 10,761, respectively. The month in which the greatest number of deaths occurred, was January—4,687; that in which the least, July—3,050, showing a difference of 50 per cent. The higher mortality of the first quarter holds good with respect to all the great classes of disease, whether epidemic, endemic, or spasmodic, with the single exception of diseases of the digestive organs, from which the greatest number of deaths occurred in the autumnal quarter, owing to the prevalence of gastritis and enteritis at that season. In the case of individual diseases, there are some exceptions to this remark. Thus, while the mortality from

pneumonia, bronchitis, and asthma, was far higher during the first quarter, than from consumption was highest during the second and third quarters, and from croup in the fourth. The number of sudden deaths, from unknown causes, was greatest in the first quarter, and the deaths in child-birth were twice as numerous in the first, as in the second and third quarters.

Of the four years, during which the deaths have been registered, viz. from 1838 to 1842, the most fatal, 1838, was also the coldest, while in 1841, the least fatal, the temperature was higher and more rain fell than in any of the other three.

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### OX-GALL.

Dr. Clay, of Manchester, has published some valuable observations on the internal exhibition of inspissated ox-gall, in our rising and rapidly improving contemporary, the *MEDICAL TIMES*, which we shall take the liberty of transposing to our pages. Our readers are well aware that we have often alluded to this subject, and published some cases illustrative of the powers of this substance in certain diseases, especially jaundice, dyspepsia, &c.

*"On the Exhibition of Inspissated Ox-gall in various Diseases. By Charles Clay, Member of the Royal College of Physicians, London, &c. &c. Lecturer on Medical Jurisprudence, &c., Manchester."*

"I have had my attention for some time directed to this somewhat novel article of the *materia medica*, with a view to ascertain its powers as a medical agent, to what cases it appeared most applicable, and the best method of administering it. Gall of animals is by no means a new remedy, for I find its use spoken of by Boerhaave, and since his by time various writers; full justice, however, has not been done to its merits, it only having been tried in isolated cases, no one taking the trouble to test its powers by frequent experiments either on the same or different diseases. Boerhaave relates, 'that he has cured pale ricketty children by pills made of the galls of the eel and the pike; that the medicine operated powerfully by urine; and that by its use the belly, before swelled, subsided surprisingly.' Lewis, in his *materia medica*, says, 'in want of appetite and other complaints proceeding from a deficiency of bile in the first passages, this animal bitter may probably be of more service than those of the vegetable kingdom usually directed in such intentions.' As an external application, ox-gall, combined with the camphorated spirit of wine, has been often spoken of in rheumatism, sprains, and bruises. From experiments made upon gall by Cartheuser, Baglivi, and others, it was found to be very soluble in water, sparingly acted upon by rectified spirits, rendering oily, unctuous, or resinous substances, miscible with water; it has the peculiar property of preserving milk from coagulating, or turning sour, or when coagulated immediately dissolves it again; this last property deserves particular notice, and to which I intend to allude afterwards. So far as experiments have been instituted on the gall of animals, there does not appear to be any great difference in its composition, and as the gall of the ox is much easier to be obtained in large quantities, I have selected it as the object of the following experiments:—Dr. Peacock, of Darlington, remarked (*Lancet*, vol. 1, 1836–7, page 398,) that he had observed in a case of scirrhus or cancerous ulcer of the breast, that when the system exhibited an accumulation of bile, the pains accompanying such diseases (cancerous) were very greatly alleviated. In the case from which he drew this inference, during the progress of the disease, the patient was frequently attacked by the symptoms of jaundice, and invariably when the white motions and yellow skin appeared, there was almost entire relief from pain. Although Dr. Peacock exhibited gall in other cases, he does not give any decided opinion upon it, but augurs favourably and wishes its being

further tested by others. Having some cases analogous, I determined on giving it a trial in such affections, before I proceeded to its trial in other diseases, towards the cure of which I fancied *its powers more applicable*.

CASE 1.—Anne H—ly, æt. 56, had a cancerous ulcer that had destroyed the greater portion of the nostrils, accompanied with the most violent lancinating pains, over which neither local applications nor internal medicines (except for a very brief space of time) had any control; the case had been long under treatment without improvement, and as a forlorn hope, I ordered the following:

R. Fel. bov. inspiss., 3ij;

Ol. carui., m. x.;

Magnes. carbonatis q. s, ut fiat massa. M.

Div. in pilulus xxxvi., capiat ij. ter in die.

In order that the effect might not be combined with any other object, no local application beyond clean washing was recommended. After taking the pills for only one day great relief from pain was experienced: on the fourth day no trace of pain remained; for three weeks the sore improved in appearance, without pain; slight pains again occurred. The dose was ordered to be repeated four times in the day. The pains again subsided, and all progressed well for two weeks longer, when the pains again occurred. Pills ordered, two repeated six times in twenty-four hours, after which the pains slightly abated, but soon recurred again. Eight weeks after the commencement the sore began to assume its old character, and the pain became violent; she soon after left the dispensary, and I lost sight of the ultimate result. Before giving the gall in this case, the *motions were particularly white, and the bowels very much constipated, with acid rising from the stomach*, all of which vanished whilst under the influence of this medicine.

CASE 2.—Hugh C—lt—on, æt. 64, of Manchester, had a scirrhus ulcer of the right mamma produced by an injury. Some years before a large fungus had been removed from the part by myself, but the ulcer remained without any disposition to close, sharp shooting pains extending to the right arm-pit, with an extensive and disagreeable discharge; appetite generally very deficient; bowels very torpid, and when moved by purgatives became immediately torpid again; *his motions were particularly white*. The treatment of this case had been various; some relief from pain, and a better disposition to heal, with less discharge from the sore, was observed (for a short time only) by the application of the pulveris ferri carbonatis in the form of ointment, and the occasional exhibition of the pil. hydrargyri c. opio internally. On giving the inspissated ox-gall to the extent of twenty grains in the day, according to the formula in case 1, a decided relief from pain took place, the sore put on a healthy appearance, his nights (before restless) were comfortable, and the discharge from the sore of a less offensive character. About a fortnight after taking the inspissated gall the pains returned; I increased the quantity to thirty grains in the day, when he again experienced the same relief; he has now taken it nearly three months, occasionally omitting it for a few days; the sore is very nearly healed, his general health very much improved, and his bowels very regular.

CASE 3.—Mrs. J—son, Ancoats, Manchester, æt. 70, with an extensive cancerous destruction of the whole left labium pudendi, extending rapidly to the mons veneris and the glands of the left groin; no local application or internal medicine gave the least relief, except large doses of the mur. morphæ, and then of the most temporary character, seldom producing more than a single hour's sleep at a time. In a case so utterly hopeless, I had not the least expectation of giving more relief (if as much as had already been obtained by the mur. morphæ). The digestive powers were almost defunct, the stomach rejecting the greater portion of food, and what was retained produced violent pain; the bowels, which were extremely torpid, seldom evacuated, *and then the motions were of a chalky*



*nature.* I ordered her thirty grains of the inspissated gall per diem. Calling upon her the day after she commenced taking it, I found she had enjoyed more rest, and had been more free from pain than for many months past. After taking it six weeks the pains were becoming violent again, and the dose was increased to forty grains per diem, which dose she now takes. It gives more relief than any other remedy, in consequence of which she sleeps better, her bowels are more regular, and the ulcerous discharge less offensive; but the work of destruction still progresses rapidly, and evidently to a fatal termination.

*Observations on the above.*—It is evident, then, that the inspissated gall is but a palliative in cases where scirrhus or cancerous diseases have assumed a malignant form; but even under such circumstances it is a valuable acquisition to the means of giving relief, though temporary; and it is probable, that if exhibited in such diseases at a much earlier period, the relief might be more certain—nay, a cure might possibly be effected. Dr. Peacock mentions the decided character of the motions (*being white*); the same appearances with obstinate constipation and deranged digestion were observed in each of the above cases. On turning over numerous authorities, I find the same sluggish tendency of the bowels, with indigestion, generally mentioned by all, which, in my opinion, goes far to prove that all scirrhus affections arise from a want of sufficient secretion of healthy bile; or, in other words, that where there is a deficiency of bilious secretion, there is a tendency to disease, and ultimate lesion of continuity in some structures facilitated by previous injury—thus, the granular structure is often the seat of such affections; hence the mammae of females are very liable. If this theory be a correct one, no better means can reasonably present itself for relief than by supplying the system with that of which it has hitherto been deficient. The effect produced in the above cases strengthens my opinion of its usefulness in cases more immediately connected with the alimentary canal, which I shall now proceed to illustrate.

CASE 4.—I was myself labouring under dyspepsia, almost every kind of food became acid soon after being taken; I had violent headaches, constant pain in the epigastric region, and bowels very much constipated, many times three or four days without a motion; occasional relief, but of a very temporary nature, was obtained by the pilulæ hydrargyri. Having been subject to these symptoms, more or less, for seven or eight years, but which have been often very severe during the last three or four years. Purgative medicines always produced great irritation and uneasiness for some time after their exhibition. Under these circumstances I took two four-grain pills of the inspissated ox-gall, not having had any motion for nearly four days; the pills were taken at four o'clock in the afternoon, and at seven, without even the slightest sensation of pain, or the common feelings arising from having taken purgatives, I had a free and copious motion, the excrementitious mass being in a pulpy form, and perfectly free from the indurated character I had been so long accustomed to. I repeated the dose next day with similar results. I experienced not even the slightest feeling of uneasiness; indeed, had I not known the fact, I should not have supposed that I had taken medicine of any kind. The acidity immediately left my stomach, and when under its influence the pains in my head and stomach were removed, and my bowels are now quite regular. From taking occasional doses, of course its effects are not sufficiently tested; but I have experienced more relief, with less unpleasantness, than from any other of the many means I have ever resorted to; in fact, its value in dyspeptic stomachs is incalculable.

CASE 5.—Mrs. W—g, the wife of a painter, thirty-eight years of age, and mother of five children, had been subject to a very constipated habit from a very early period of her life, not unfrequently the space between evacuations extending twelve or fourteen days, and very commonly to ten days, whether pregnant or the same tendency to constipation existed: she had sought advice from

medical men of the highest repute and experience, but at most only received temporary relief, her bowels almost immediately relapsed into their accustomed state, in spite of the best efforts to the contrary. In the endeavour to procure motions, she had frequently taken from ten to twelve ounces of the *ol. ricini*, and twenty or thirty drastic purgative pills before an operation could be procured, and then with great pain in the bowels, vomiting, &c., only parting with small balls of indurated *fæces*. Before giving the inspissated gall, I thought it advisable to test the obstinacy of the bowels by other means, and therefore ordered the following mixture:—

R. Alb. ovi. f. 3j.  
 Olei ricini f. 3ij.  
 Olei menthæ, pip.  
 Olei crotoni, *aa.* m. iij.  
 Aqua puræ f. 3vj. M.

Sumat æger coshlearia duo magna quaque tertiâ horâ.

After persevering two days with this, only one small motion was passed, and that with violent vomiting, and almost intolerable pain, the *fæces* having the character of hard balls. Waiting two or three days for the excitement to subside I then ordered the inspissated gall, according to the formula in case 1, giving two four-grain pills three times a day, or twenty-four grains in the day; in little more than six hours from the first dose, and before taking the third, she had a very copious motion, without the slightest degree of sickness or pain, except for a few moments, caused by the hardened *fæces* passing the sphincter ani; on the second day a second, and a third motion, as easy as the first, were passed, when I extended the intervals between the doses of the pills to six hours, viz., sixteen grains per diem: from this time her bowels were perfectly regular, and without the slightest uneasiness. Three weeks from the commencement of taking the inspissated gall, she omitted the pills entirely for three days, when the bowels were disposed to assume their former state; resuming the pills once in the day she became quite regular. It is now eight months since the first trial with the gall, and having left off the pills entirely for the last two months, she is quite regular in her bowels. The effects of the inspissated gall in this case were decided, and highly satisfactory. A more obstinate case, showing a more favourable result, could scarcely be adduced.

CASE 6.—Mrs. Ll—d, also a painter's wife, 23 years of age, accustomed to weighing out white lead paint to the workmen for five or six years past, during which time she has been subject to obstinate constipation of the bowels, averaging one movement in seven days. It was with great difficulty that motions were procured oftener by medicines of any kind, although she had tried numerous applications, and then with great pain and sickness; the motions when passed were like hardened white marl, evidently characteristic of a deficiency in the bilious secretion. I may here also state the same appearance of the evacuations accompanied those of case 5. I ordered twenty-four grains of the inspissated gall per diem; the very day after, her bowels were freely and copiously moved, and have continued perfectly so since, after taking the gall for a fortnight; she reduced the doses from three to one per diem; that is, eight grains every morning for three weeks longer. It is now only taken occasionally, the bowels are quite regular, and as in the cases before stated, not the slightest feeling of pain or sickness occurred during its exhibition, the parties taking it experiencing no symptoms of being under the influence of even the simplest laxative medicines.

CASE 7.—John D—t—n, a working painter, æt. 30, in the habit of sleeping in the workshop for the better security of his master's property; had been subject to constipation of the bowels since he was an apprentice to the trade (about fifteen years); motions only occurring about every seventh or eighth day, and then of a chalky indurated character; his countenance was sallow, appetite bad,

and he had frequent attacks of the colica pictonum. I commenced treatment in this case by giving the oleaginous mixture as in case 5, but with little effect, and that at the expense of great pain and sickness; the motions procured were hard, knotty, and very small in quantity. I then ordered thirty grains of the inspissated gall per diem; on the second time of his taking it, the bowels were copiously moved without any unpleasant symptom; he has taken it about a fortnight, and the bowels are now quite regular, and the motions of proper consistence; he expresses himself more comfortable in his feelings, with a better appetite for food than he has experienced for many years.

In addition to these cases, I may mention I have given it in the common constipation attendant on pregnancy with the best effects.

*Observations on cases 4, 5, 6, 7, &c.*—I cannot reflect on the effects of the inspissated gall in the cases, 4, 5, 6, 7, &c., without great satisfaction; since it proves, as I anticipated, a most valuable adjunct to our means of improving the condition, and correcting the mischiefs, of the alimentary canal; and as the diseases connected with it are evidently either entirely cured or very much ameliorated by its exhibition, I think there can be no doubt that where obstinate constipation exists, whether it be cause, or the consequence of the present abnormal state of the system, it arises either from a vitiated property of the bilious secretion, or a deficiency as to the quantity secreted; if so, the substitution of inspissated healthy bile must improve the condition, and the quality of what is already in the alimentary canal, producing also a proper effect on the fecal mass; if there be a mere deficiency in quantity, the introduction of an additional supply must better answer the intentions of nature in performing her excretory operations. If I take the whole range of cases hitherto introduced as illustrative in this essay, *deficiency in quality or quantity of bilious secretion is the prominent and prevailing accompaniment*. If I were asked how the inspissated gall acts so as to procure a more soluble state of the fecal mass, in such cases as cited in Nos. 5, 6, and 7, I should say distinctly, neither as a laxative, purgative, nor drastic, all such producing, to a greater or less extent, a stimulus to the intestinal coats, exciting them to propel their contents and to excite an extra secretion from the exhalents (the latter action, however, in my mind, is rather questionable); such is the generally allowed operation of the various degrees of cathartic medicines, and the common consequence arising from taking such is nausea, sickness, griping pains, &c., more or less, according to the character and dose of the medicine employed. Inspissated gall, on the contrary, produces not the slightest pain or sickness, and yet a motion can with equal (or greater certainty) be relied upon, and that in a form most easy and natural for propulsion. It is evident its action is not as a cathartic, but as a direct solvent to the accumulated hardened fecal mass, *the consequence of deficiency of quality or quantity of bile in the alimentary canal*; as such, its effects may be produced without pain or uneasiness, which would not be the case if its action was on the principle of cathartics. I shall, in my next communication, show the effects of inspissated gall in diseased livers, dropsies, and in that numerous class of diseases arising from acidity in the first passages of children, with some experiments on the bile and fecal matter.

In continuing my practical observations on this question, I would remark that the constipation attendant on working in frequent contact with white lead, would lead to the conclusion that it had a direct tendency to arrest the secretion of bile, not only as to quantity but quality, so as materially to impede the healthy process of digestion and excretion of fecal matter. I have never yet seen a case of painters' constipation without the white motions indicative of this deficiency. The cases 6 and 7 are examples of this. In respect to case 5, though frequently in contact with white lead, yet the habitual constipation had been observed from infancy, and therefore could not be directly attributed to the effects of lead, as the same deficiency of bile had been observed in the motions from her earliest  
 "lections. The case was one of the most obstinate character, and no doubt

rendered worse by the husband's occupation, in which she assisted. It appears to me contrary to common sense to attempt to evacuate the intestines of fecal matter by drastic purgatives (except by those of an oleaginous nature), the inner coat of the intestines being almost destitute of mucous secretion, and the feces hardened by the absence of bile; an attempt to move the bowels by drastics under such circumstances must endanger inflammation. But if (as I shall afterwards prove) ox-gall directly dissolves the hardened feces, and by that action alone renders them easier of propulsion, by the addition of bile I directly overcome the constipation, and by charging the system with an extra quantity of healthy bilious secretion I prevent its recurrence, giving time for improving the secretory powers of the liver by other remedial measures. In cases of constipation produced by the exhibition of opium, it is always remarked that the motions are clay coloured, evidently proving that less bile is secreted than ought to be, opium having a more decided effect on the secretion of the liver than that of any other organ in the body; hence (the bilious secretion being checked, or materially diminished by the presence of opium) follows that obstinate and frequently mischievous *constipation* so often met with in practice, and more particularly in children, who are so often crammed with sleeping nostrums. When I have found it necessary to employ opium in the treatment of disease where I wished to avoid its peculiar tendency to constipate the bowels, I have always succeeded by combining in with the inspissated gall, which in no way impedes the desired action of the opium, whilst it is an effectual preventive to its confining the bowels.

CASE 8.—William Macartney, æt. 56, had a constantly irritating dry asthmatic cough, which only gave way to the pil. scilæ comp. c. opio at bed-time in large doses; but in consequence of their tendency to confine the bowels, he was obliged to omit them, to the great sacrifice of his rest and comfort, and take purgatives. I ordered him eight grains of inspissated gall every morning, and the pil. scilæ comp. c. opio at bed-time; from the commencement of his taking the gall pills the bowels became quite regular, and have remained so ever since: thus the gall perfectly counteracts the constipating effects of the opium, whilst its sedative effects appear in no way diminished.

In addition to the cases already enumerated, I might add many others of dyspepsia in treatment and result so nearly like my own (case 4), that a repetition of particulars will, therefore, be unnecessary; suffice it to say, they have all been effectually relieved by the same means, their stomachs and bowels assuming a regularity quite new to them, without any apparent effort, or causing the least uneasy symptom.

The following cases are in connexion with extensive organic disease of the liver, in which the inspissated gall was of considerable benefit in preventing the strong tendency to constipation which existed.

CASE 9.—Mrs. P—t—ton, æt. 65, for a long time affected with a scirrhus affection of the liver, with great enlargement of that organ; the bowels often very torpid, motions chalky, and when so, suffered severely from pain, loss of sleep, &c. Independent of other treatment, I gave the inspissated gall to the extent of eight grains night and morning, and it was very remarkable how much more regular the bowels immediately became under its influence; and though the organic disease was too extensive for any permanent relief, yet the ease she experienced from her bowels being more regular, was a sufficient inducement for her to prefer taking the inspissated gall pills to any other remedy previously tried, which indeed had scarcely any effect at all upon her.

CASE 10.—Anne C—I—n, æt. 30, had chronic inflammation of the liver, accompanied with obstinate constipation, whitish motions, &c; after leeching, blistering, hydrarg. chlorid. &c., the obstinacy of the bowels still existed. I then ordered eight grains of the inspissated gall every night and morning. Im-

mediately a great change manifested itself in the appearance of the motions, and perfect regularity was established, with a slight increase of urinary secretion (*the only adult case in which I had observed any distinct action on the kidneys*). The case in now quite well, not the slightest trace of the liver affection remaining. In addition to cases of this description, I might add the opinion of Dr. S. Johnson of this remedy, as recorded in the *Lancet*, vol. 1, 1840-1, page 447, where he states from fifteen to thirty grains per day had been administered by him with the best possible effect in bad cases of jaundice; it was indeed this statement that first induced me to test its merits at greater length, in which I have not been disappointed. In respect to the action of ox-gall on the kidneys in adults, I very much question its utility, as I have not been able to perceive any increase of urinary secretion in the foregoing instances except in case 9, and that very limited, and which might with equal propriety be attributed to any of the other means employed, I therefore do not think it promises much in cases of dropsy. The high authority, however, of Boerhaave, as quoted at the commencement of these observations as to its effects on children, increasing the secretion of urine, cannot be passed over. I have not given it to marasmoid children to that extent to speak decidedly; but in the cases in which I have had an opportunity of exhibiting it, I have observed a decided and marked improvement of the system—the tympanitic state of the belly reduced—appetite improved—motions of a bilious character—and an increase of urine. In all cases of marasmus, whether of children or in the atrophy of adults, I have in ox-gall a valuable remedy. In acidity of the stomach, &c. of children, it is of most decided, effectual, and immediate relief. The curdled vomitings, green motions, abdominal gripings, and restlessness immediately disappear, and a better state of general health is substituted: in all such cases there was a decided action on the kidneys, increasing the secretion. On looking at its effects upon children as just stated, particularly whilst at the breast, living almost entirely on milk, the result is not different to what we might suppose when considering the experiments of Baglivi, Lewis, &c. *'That it prevents milk from turning sour, and dissolves it when in a state of coagulation;'* an antacid preparation is indicated, which is one of the peculiar properties of this remedy. To show its direct effect upon hardened fæces, a child of sixteen months old passed a very hard motion with very great difficulty, not having had one for three days. I poured a solution of ox-gall over it in a vessel, immediately its chalky appearance was changed to a more healthy bilious colour, and reduced to a pulpy mass in half an hour; from this fact, I will suppose a case, (one which has frequently occurred in my practice,) an adult with hardened fæces in the rectum, almost, if not impossible, to pass without assistance; under such circumstances, what could afford a better prospect of relief than two or three ounces of recent gall, diluted with as much water, used as an injection. It is needless to observe I would pledge myself as to the result, viz. an immediate softening of the mass facilitating its propulsion.

So far as these experiments have progressed, the use of ox-gall in some diseases is of the most satisfactory character, presenting us with an excellent and peculiarly effective corrective for the many and various derangements of the alimentary canal, unlike many of our best medicines, inasmuch as in whatever cases it is given, if no benefit results, no harm is ever experienced from it. Its action on the system is not as a purgative, but as a mere solvent of the material contained within the intestinal canal, producing no excitement to propel, but by liquifying the mass, facilitating its excretion. It is also a tonic—and in children to a moderate extent, a diuretic—but less so in an adult. It appears to have a peculiar and specific action on all that variety of diseases connected with derangement of the digestive organs, and from the proofs I have advanced, I believe it worthy of extensive trial. The preparation I have been in the habit of giving, is simply the recent gall of the ox slowly evaporated to the consistence of extract, and afterwards made into pills, as in the formulæ already given; it is sufficiently firm I prefer the simple extract made into pills without

any addition ; and if the gall be *recent*, it has very little smell, but an intensely bitter taste. The gall-bladder of a moderate sized ox will afford as much extract as will make one hundred four grain pills, and is an article both cheap and easy to procure. Trusting it may be further tested by others, I leave it to the profession, confidently recommending it to their notice.

The value of opium as a remedy in disease is acknowledged by all practitioners, and it would be much more generally given if it were not for the constipation resulting from its application, by the general check it is supposed to give to the operation of the secreting organs. How this is accomplished is not so easily explained ; physiologists admitting, that though digestion may progress during sleep, secretion is but very slowly carried on. The action of opium, then, may not be direct on the secretory organs, but by producing artificial sleep, *through that sleep* produce the check to the secretions, generally attributed to the direct effect of the opium itself.

Perspiration, however, may be adduced as a contradiction to this, but it may with equal propriety (as it has been frequently) be denied that perspiration is a *secretion* ; this (perhaps properly called) exudation being most certainly and frequently produced by sleep, it also follows that the perspiration attributed to various preparations of opium, 'pulv. Doveri, &c.' may not be the direct effect of the preparation used, but the consequence of the sleep produced by it. Dr. Holland, in his 'Notes and Reflections,' observes, 'the fear of confining the bowels, and checking the secretions, constantly present to the mind of the practitioner, prevents the adequate use of a medicine, having the power of mitigating pain, relieving spasm, procuring sleep, and producing perspiration, &c.'

In whatever view the action of opium is considered, it must be acknowledged that if its action *can* be secured without the disadvantages generally attributed to it, its value as a remedial agent must be very considerably increased, and the frequent objection to its use be done away with. That such can be *positively* accomplished by the combination of ox-gall with it, the cases here given fully prove. And supposing the secretion of bile in the system to be deficient in quality, or quantity, originating disease from whatever cause, there cannot remain a doubt but that an artificial supply of bile must be attended with the best possible results ; that *substitute* acting in the full capacity of the original secretion, until such secretion be either amended or restored. Ancient pathologists, particularly of the Hippocratic school, attributed considerable importance to bile : and perhaps moderns have too much neglected the results arising from its redundancy or deficiency in the animal system. What I have hitherto advanced has been chiefly to illustrate the deficiency of bile in the alimentary canal ; but before I conclude this subject, it may be necessary to observe very briefly, that diseases not unfrequently arise from the bilious secretion being too great in quantity, and what necessarily follows, depreciated in quality, hence those obstinate and long-continued diarrhœas, and cases of jaundice, *accompanied with purging*, (*which are very distinct* from the common run of cases of jaundice,) being the consequence of mechanical obstruction in the biliary ducts, always accompanied with constipation, little or no bile passing along the alimentary canal. But I have frequently observed cases of jaundice, and more in infancy than adult ages, where no such obstruction existed, and where motions evidently indicated a full sufficiency of bilious secretion. Jaundice arising from obstruction in the biliary ducts *may*, after the mechanical obstruction has been removed by emetics, &c., be much benefitted by the exhibition of gall internally, which not only assists the bowels in passing off the excrementitious mass, but improves the secretion of bile so as to prevent the formation of gall-stones in future. But those cases accompanied with lax motions, as well as long standing cases of obstinate diarrhœa, would rather be injured than benefitted by it. The only resource in such is to lessen the bilious secretion, and I know of no one object more efficient in checking that secretion, and exciting perspiration, than small and frequent doses of crude opium, with warm clothing. If once the exudation

by the skin becomes apparent, in such cases it may very certainly be predicated that the secretion of bile is lessened, and the case progressing towards a cure. I am convinced there exists a remarkable sympathy between the secretion of the liver and the exudation by the skin, either of which being lessened increases the other, and vice versa.

The case of diarrhoea reported by Dr. Clendinning in the 'Medical Times' since the first part of these observations were written, I should rather attribute to a too free secretion of vitiated bile, than to the locality in which it occurred ; and the warm clothing he so judiciously advised, by promoting perspiration, lessened the bilious secretion, and so checked the diarrhoea. I have witnessed many similar cases with similar results. I think there is much reason for supposing that the bilious vomitings, motions, &c. as observed in Asiatic cholera, are in consequence of a too redundant secretion of vitiated bile, further confirmed by the sympathetic state of the skin, dry, cold, and shrivelled ; in such cases inspissated gall offers itself with every probability of improving the condition of the system when combined with opium. I only speak on supposition, as I have not had an opportunity of testing its powers in that dreadful scourge. Another remarkable disease falls within the range of supposition—viz. diabetes, now pretty generally allowed to be, in the first stage, an attack of the stomach, proved by the acidities, constipation, &c. present ; here again is perceived the strong connexion between the organs of digestion and the skin, being almost, if not perfectly, free from exudation. These symptoms are so strictly analogous to those in which inspissated gall has been so decidedly effective, that I would not hesitate to anticipate great advantages from it, if not a direct cure. I do not wish to be misunderstood. I do not mean this to apply to the secondary stage of diabetes, where the urinary organs are so extensively deranged ; when that occurs, I have had great success in the exhibition of the tinct. ferri. sesquichloridi (see cases reported in *Lancet*, vol. i. 1840-1, p. 84.) I have not, however, had any cases of diabetes since I began to apply the inspissated gall to practice to test its merits upon, but I think it capable of correcting the evil, and certainly worth trial, since so little satisfaction has been derived from any means hitherto suggested, any new plan is justifiable."

#### DORTON CHALYBEATE.

There are but few, either in or out of the profession, who know anything of a strong chalybeate (Dorton) situated 12 miles from Oxford, and six from Thame, which has no small local reputation in the neighbourhood for the marvellous, not to say miraculous cures which it has effected. The water rises clear, and has a strong inky taste, and a peculiar though not unpleasant odour. When exposed to the sun and air, a slight pellicle appears on the sides of the glass and surface of the water. Soon after this it lets fall a light brown sediment, which may be re-dissolved by the addition of a few drops of sulphuric acid. The well exhales a rather strong sulphureous odour ; but unless the water is taken at the fount or bottled immediately, this odour is soon lost. When first poured into a glass it exhibits a momentary sparkling appearance, and when swallowed in that state produces a refreshing and exhilarating effect. When mixed with powdered galls or strong tea it becomes quite inky—or rather ink. The following are the leading contents of a pint of this Spa, as ascertained by Professor Brande.

Traces of carbonic acid	
Sulphate of lime	11½ grs.
Muriate of soda	1½
Sulphate of alumine	2
Sulphate of iron	10

This Spring contains infinitely more iron than Tunbridge Wells, and one-third as much as the celebrated styptic water of Sandrock in the Isle of Wight. From the above analysis it is evident that people of full or plethoric habit, or with costive bowels, should be extremely cautious how they use the Dorton Chalybeate. In almost all cases, it is advisable to take the Spa diluted with an equal quantity of warm water. Mr. Knight, who has written on this Spa, informs us that, in cases of dyspepsia, attended with loss of appetite, flatulence, tremors, nocturnal watchings, low spirits, &c. a patient trial of this chalybeate has often produced permanent relief. Patients of this description should take two wine-glassfuls an hour before breakfast—and the same quantity an hour before dinner. In a few days the dose may be increased to a moderate tumbler-full. A brisk walk, immediately after taking the water, will promote its good effects. In this, as in all other complaints, the bowels should be well cleared before commencing the chalybeate, and carefully attended to during the course.

It has acquired considerable reputation in chorea—leucorrhœa—menorrhagia from debility—chlorosis—and in all relaxed and cachectic states of the constitution. In these conditions, the water is not only taken internally, but used as a tepid bath also, as an auxiliary. In scrofulous sores, and a variety of cutaneous complaints, especially psoriasis and lepra, the waters of Dorton, inwardly and outwardly, have acquired considerable fame. In herpes and tinea, the same may be said.

The Spa is delightfully situated, a mile from the romantic village of Brill.

"A lovely village seated on a hill,  
Where Nature wears a most bewitching mein,  
Where beauteous scenes, enchanting prospects fill  
The enraptured soul, with ecstasy supreme."

Mr. Knight has published some remarkable cases that have been cured by the Dorton Spa. We shall only notice one. A married female was severely afflicted with lepra pervading the whole body, with the exception of the face. Dr. Ferguson, of Windsor, had tried various remedies, including arsenic, without relief. The thick scales on her legs, when cracked, discharged through the fissures considerable quantities of blood, as well as humour. The waters, both internally and externally, were employed vigorously. The desquamations daily were astonishing, the incrustations resembling pieces of leather. The baths were taken at 110° of Fahr. and kept up for half an hour, every second or third day. The skin rapidly attained its wonted appearance, and ultimate recovery took place. Mr. Knight used saline medicines in aid of the waters. We think the medical gentlemen in the neighbourhood should experiment on this powerfully tonic Spa.

#### SOME CASES OF SUDDEN DEATH FROM HÆMORRHAGE OF THE LUNGS IN CHILDREN. By CATHCART LEES, M.D.\*

*Case 1.*—A delicate boy, æt. 6, of lymphatic temperament, had been labouring under tubercular phthisis for some time, when he was suddenly attacked on the 1st of March with profuse hæmoptysis, which subsided under treatment; this returned on the 4th, and he expired while coughing up large clots of blood.

On examining the chest, a large quantity of sero-sanguineous fluid was found nearly filling the cavity of the left pleura, and in the inferior lobe of the left lung was a cavity of the size of a large nut, filled with coagulated blood; the parenchyma of the lung forming the walls of the cavity was softened, irregular, and of a dark colour, not lined by any membrane, nor were there any bands crossing it, but on passing a probe through the division of the pulmonary

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\* Dublin Journal, May, 1842.



artery leading towards the cavity, a large branch was found to open into by a wide aperture, with ragged edges, and which had evidently furnished the hæmorrhage.

The substance of the lung around was softened, and presented a gangrenous odour. A large bronchial tube opened into the cavity, which with the trachea was filled with coagulated blood. The apex of the lung was studded with miliary tubercles.

*Case 2.*—William Hall, æt. 3, of scrofulous diathesis, had been labouring under tubercular phthisis; he was attacked suddenly with profuse hæmorrhage, which ceased for a time, and recurred fatally on the third day.

A tubercular cavity, of the size of a pigeon's egg, was found in the posterior part of the apex of the left lung, traversed by several branches of the pulmonary artery, one of which opened into the cavity, which had a distinct lining membrane, and contained a large coagulum. The lung was enlarged and completely occupied by tubercular deposition; the right lung was also studded with miliary tubercles. The stomach was distended with very dark blood and clots; tubercular deposits in the liver: mesenteric glands enlarged.

*Case 3.*—Fanny B——, æt. 9 months. Was deserted at the gate of the institution eight months ago, had aphonia at that time, and never could cry, although it had no dyspnœa or croupy cough; the aphonia continued up to its death, which was caused by profuse hæmoptysis.

The rima glottidis was nearly closed by a fibrinous deposition which occupied the chordæ vocales, and extended into the ventricle of the larynx. In the inferior lobe of the left lung was found a large irregular cavity, into which a branch of the pulmonary artery opened. The whole lung was hypertrophied and occupied by tubercular deposition.

*Remarks.*—The above cases have been considered worthy of being recorded, not only from the great interest which must always be attached to sudden and profuse bleeding from the lungs, as well as from the rare occurrence of hæmoptysis at so early an age, but also because every case of sudden death (particularly in children) which can be explained satisfactorily by the state of the organ after death, is of importance; and lastly, as there are few, if any, accurate accounts of the bleeding vessel having been distinctly traced into the cavity.

The first case is peculiarly interesting, as an instance of what Bayle calls the phthisis ulcereuse. It appears that gangrene had attacked the tubercular cavity, and a portion of the lung had given way, probably from mechanical causes, as there were no appearances of pleuritic inflammation having been set up in the adjacent parts, and Nature had neglected her usual precautionary measure of obliterating the canal of the artery to provide against hæmorrhage.

The appearance of the blood in the stomach in the second case was very striking. It is doubtful whether its black colour was to be attributed solely to the chemical action of the gastric acid, or partly to its being, as it were, pumped directly from the pulmonary artery into the stomach.

The last case presented some points of peculiar interest.

1st. The extreme youth of the infant.

2nd. The existence of vegetations of a peculiar character nearly closing the glottis, and yet not causing any stricture, dyspnœa, nor appearing to affect in any manner except by producing aphonia.

3rd. The granular appearance of the cavity, not lined by any membrane.

4th. The hypertrophy of the lung in which the cavity was formed. This state is oftener met with in connexion with tubercular development than is generally supposed, and if, on investigation, found to be the case in many instances, must qualify the proposition, that atrophy of the lung always attends the earlier stages of tubercle, and that a contraction of the chest must necessarily follow.

## EXTRA-LIMITES.

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A STATISTICAL ACCOUNT OF THE PRINCIPAL DISEASES WHICH HAVE OCCURRED AMONGST THE CHILDREN ADMITTED INTO THE ROYAL MILITARY ASYLUM, CHELSEA, from the 1st of January, 1825, to the 31st of December, 1841, inclusive, with Remarks and Observations; together with the Detail of some peculiar Cases. By *Samuel Geo. Lawrence*, Surgeon to the Institution.

In offering the following statement of the principal diseases that have occurred amongst the children of the Royal Military Asylum, with a detail of some peculiar cases and *post-mortem* investigations, to the notice of my medical brethren, I am actuated by the desire of aiding my contribution to medical statistics, as well as to pathological anatomy, both being now so much attended to, and properly appreciated.

Since my appointment to this Institution I have been in the habit of keeping notes of most of the diseases which have prevailed amongst the children, and, with very few exceptions, have instituted a *post-mortem* examination in every fatal case.

I hope, therefore, that the result, as it includes a period of seventeen years, will not be found devoid of interest.\*

Since the year 1828 there has been a gradual reduction of the number in this Institution, which will be seen by referring to the following tabular return under the head "establishment," the number there stated being that which by order of Government it must not exceed. The number, however, must necessarily fluctuate very much, from the admissions not corresponding with the number leaving the Asylum as they gradually attain the prescribed age; this will be seen on reference to the return under the head "average daily strength of the establishment."

I shall now give the return stating the number of sick treated, and the fatal diseases which have occurred from the 1st Jan., 1825, to 31st. Dec., 1841, inclusive, specifying the number that have had those complaints natural to children, as small-pox, measles, scarlet fever, chicken-pox, whooping-cough, &c., together with the average proportion of sick to strength, average of deaths to number of sick treated, &c. I ought, perhaps, to observe with respect to the return, that the

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\* As the nature and object of this Institution may not be generally known, I shall briefly state, that it was instituted by the late Duke of York, in the year 1803, for the maintenance and education of the children of soldiers of the regular army: the limited number at first was 1,000, which was afterwards increased until the year 1814, when the number amounted to 1,250, (850 boys and 400 girls,) and this was the maximum number at one time within its walls.

The children are admitted from the age of 5 to 10 years. The boys, when they attain the age of 14 years, if eligible, are enlisted as soldiers, but if not fit for the army are apprenticed to some trade, and the girls, on their attaining the same age, are sent out to service as domestic servants, &c.

In the year 1823 the female children were removed to the Royal Military Asylum at Southampton, a branch of this establishment, but which was abolished in November, 1840, when the few that remained (52) were sent here.

same boy may be admitted several times during the year for relapses, especially in cases of ophthalmia, porrigo, and in some other diseases, which make the numbers appear great under those particular heads. Without taking this into consideration it might give an erroneous idea as to the general amount of sickness amongst the children. Under the head ophthalmia all diseases of the eye are included; by far the most common are the various species of scrofulous ophthalmia in which also relapses are very frequent. No case of the purulent or Egyptian ophthalmia, once so prevalent here, has appeared for many years. Under the head "common fever," are included all kinds of febrile affections not of a specific nature.

I shall now proceed with remarks and observations, detail of particular cases, and *post-mortem* examinations, in chronological order, intending them to form a sort of commentary on the return.

## 1825.

In the beginning of *April* of this year measles appeared among the children, and during that month 57 were admitted for this complaint, of which number 20 had it severely, attended with inflammation of the trachea and lungs, and three of them died, the remaining 37 had a comparatively mild disease.

In *June* scarlet fever broke out and continued until the end of *September*; during this period 49 children had this disease, but it was generally of a mild character, and dropsical symptoms supervened during convalescence only in one boy, and he recovered.

In the beginning of *October* measles again prevailed about a fortnight after the scarlet fever had ceased, and during this month and *November* 26 were attacked with it, of which number 12 were severe cases, and 14 mild—one of the former dying consumptive in the month of *February* of the following year.

Seven cases of small-pox occurred during the months of *March*, *April*, *May*, and *June*, of this year, one of which only was severe.

There were also seven cases of chicken-pox all very mild, with little fever, and which occurred at the same time that the small-pox prevailed.

In the month of *September* a boy, aged 13 years, had the operation of extirpation of the right eye performed on account of a cancerous fungus, from which he perfectly recovered.

Of the eight fatal cases which occurred this year I shall briefly detail the *post-mortem* examination of two, which I deem more particularly interesting.

*Case 1.*—Robert Lusk, aged 13 years, a boy of decided scrofulous diathesis, had been suffering for a considerable period from the usual symptoms of mesenteric disease. He became greatly emaciated and died on the 23rd Feb., 1825.

*Autopsy*, 48 hours after death.

*External appearance.*—Extreme emaciation of the body generally, the abdomen was much distended, but evidently not from air, it being very hard and incompressible.

*Thorax.*—The lungs on both sides of the chest partially adhered to the *pleura costalis* by long threads of false membrane. On cutting into their substance the structure of both was perfectly healthy.

*Pericardium* contained 3ss. of serum.

*Heart* rather small.

*Abdomen.*—On making an attempt to cut into this part of the body, the whole contents—liver, omentum, stomach, intestines, &c., were perceived to be firmly adherent to the peritoneum, and consolidated into one mass.

The liver and stomach adhered so firmly to the under surface of the diaphragm that they could not be separated, even with a scalpal, without cutting into one or other organ. The large and small intestines were completely agglutinated together and to the contiguous viscera, forming with the greatly enlarged and in-

durated *mesenteric glands*, one confused mass of disease. The *peritoneum* was very much thickened and of a cartilaginous hardness. On opening the *stomach*, which was much distended with air, a small quantity of mucous and a dark-coloured fluid, resembling coffee-grounds, were seen. The liver was of its natural colour, but its texture was harder than usual. The intestines were much contracted, contained very little air, and were filled with a soft pultaceous faecal matter of a light yellow colour.

The *mesenteric glands* were very greatly enlarged, and of a cheesy consistence.

Of the numerous fatal cases of *tabes mesenterica* which I have examined, none have exhibited so much general disease of the contents of the abdomen as the above, yet there was nothing very peculiar in the symptoms. He had no great degree of fever, pain was seldom complained of in the abdomen, unless under pressure, the tongue was in general clean, his appetite was very capricious. The pulse was unusually slow towards the latter stage of his complaint, there was almost constant diarrhoea, and he appeared ultimately to die from inanition.

*Case 2.*—Henry Williams, aged 14 years, of scrofulous habit, after acute suffering died with symptoms of peritoneal and intestinal inflammation, on the 15th May, 1825.

*Autopsy*, 40 hours after death.

*Thorax.*—The *right lung* was perfectly healthy, but the *left* partially adhered to the *pleura costalis*, was much hepatised, and contained several tubercles.

*Abdomen.*—On opening this cavity, a very extensive and confused mass of disease was exhibited. The transverse arch of the colon was ulcerated and communicated with the duodenum. All the convolutions of the *small intestines* were agglutinated together, and contained much liquid faecal matter mixed with castor oil which had been swallowed. Several abscesses or purulent depôts had formed in various parts of the mesentery between the convolutions of the small intestines, and there were small ulcerated apertures at different places of the ileum, which communicated with these abscesses, and the intestines were so soft and altered in structure as to tear on the slightest force being used. The sigmoid flexure of the colon was ulcerated and loose faecal matter had escaped into the pelvis behind the bladder.

The *peritoneum* was much thickened throughout. The *liver* adhered firmly to the diaphragm, stomach, and contiguous parts, but when cut into appeared of healthy structure. The gall-bladder contained a small quantity of bile. The *stomach* also adhered to the diaphragm and contiguous parts, its internal coat was healthy, and only contained a small quantity of dark-coloured fluid.

This boy must have suffered from abdominal disease for a long time without complaining, for he had only been under treatment in the hospital three weeks.

His brother died in this Institution some years since of *mesenteric* disease.

#### 1826.

In the month of January, a species of influenza or epidemic catarrh prevailed among the children, and 55 were admitted with it during this month, but the symptoms were mild, most of them recovering in a week or ten days.

In the month of May a boy, aged seven years, suffered amputation of the thigh, on account of scrofulous disease of the knee-joint, which did well.

During the Summer 12 children had the chicken-pox. All had very little fever.

In the Autumn measles appeared, and 20 had this disease—seven severely, two of whom died with symptoms of pneumonia—and in the remaining 13 the symptoms were mild.

There were also 12 attacked with whooping-cough; three of whom died, two with symptoms of pneumonia, and one from debility and gangrene of the cheek, apparently superinduced by the disease.

Nine deaths altogether occurred in this year, and it is worthy of remark that eight were from diseases of the respiratory organs. It should be mentioned that the Winter of this year was particularly severe, and the frost intense, the thermometer during the months of January and February being several times as low as 17° degrees of Fahrenheit, or 15° below the freezing point.

I shall give the *post-mortem* examination of one of those who died from whooping-cough.

**Case 3.**—Alfred Green, aged seven years, was attacked with whooping-cough on the 30th of October, and was a delicate child. The paroxysms of coughing were very violent, and he soon became much reduced and exhausted, emaciation rapidly came on, with sloughing and ulceration of the hips and lower part of the spine. About a week before his death, which took place on the 17th of December, he was attacked with sloughing ulceration of the gums on the *left* side of his mouth, and in a day or two a circular gangrenous spot, about the size of a shilling, appeared on the inside of the cheek of that side, and which on the day he died it had nearly perforated, the external part of the cheek having assumed the same inflamed and sloughy aspect.

*Autopsy*, 22 hours after death.

**Thorax.**—Complete and firm adhesion of the lungs on both sides of the chest to the ribs, requiring the scalpel and much force to separate them; the *pleura pulmonalis*, was also much thickened. On cutting into the substance of the lungs, the right appeared healthy, but the *left* was partially hepatised.

The *pericardium* contained about six ounces of serous fluid, the heart was natural.

**Abdomen.**—Nearly a quart of a turbid serous fluid was found in this cavity. The *omentum* had no adipose substance between its layers, but was much thickened and unusually vascular, and the lower part of it was so much indurated as to be of a cartilaginous consistence.

The *mesenteric glands* were much enlarged and indurated, several being as large a moderate-sized walnut.

Of the two deaths from *phthisis pulmonalis* this year—one was a boy aged six years, in whom the disease appeared to have been excited by measles—and the other, aged 12 years, was (according to his mother's statement) the last of *twelve* of her children who had died of consumption. On the *post-mortem* examination both exhibited the usual appearance of tubercles, and vomices of various sizes in the lungs.

1827.

Five cases of scarlet fever occurred this year—two in the Spring and three in the Winter months—all severe, with much affection of the throat and fauces. There was a case of small-pox on the 28th of December, in a boy six years of age, who was said by his mother to have been vaccinated when *three weeks* old. A very indistinct and equivocal mark was observed on his admission into the Asylum in November, only one month previous to his being attacked with the small-pox. He had a severe and confluent form of the disease, leaving numerous permanent pits and marks on his face and body. It was also followed by several phlegmonous abscesses.

Four cases of chicken-pox also occurred this year.

Among the fatal cases there was one from pulmonary and mesenteric disease, having also caries of the shoulder-joint, which I shall relate.

**Case 4.**—William Lodge, aged seven years, of a highly scrofulous habit, was

admitted into the hospital in November, 1826, for an abscess over the deltoid muscle of the left shoulder: he stated that it was caused by a severe blow he received on the part from a brush being thrown at him by another boy. It was in a few days punctured, and a large quantity of pus evacuated: soon after it was perceived that the abscess communicated with the joint; he was also suffering from symptoms of pulmonary and mesenteric disease. Hectic fever supervened, he gradually became much emaciated, and died on the 28th of April, 1827.

*Autopsy*, 36 hours after death.

*Thorax*.—The lungs on both sides of the chest adhered firmly to the *pleura costalis*, except a space on the right side, in which about six ounces of serous fluid were effused. On cutting into the substance of the lungs, both were found much diseased, being interspersed with tubercles and vomicae.

The bronchial glands were much enlarged, and of a soft cheesy consistence.

*Pericardium* was thicker than usual, and contained nearly four ounces of serous fluid—*heart* natural.

*Abdomen*.—Upwards of a pint of turbid fluid mixed with flakes of lymph was found in this cavity. The *liver* was partially adherent to the diaphragm and side of the abdomen by threads of false membrane, and its peritoneal coat was much thickened. The *intestines* were of a pale colour, quite empty, and had a few spots resembling extravasated blood on their external surface.

The *mesenteric glands* were considerably enlarged and converted into a caseous consistence.

*Left Shoulder Joint*.—On examining this joint, the head of the *humerus* as well as the glenoid cavity of the scapula were found soft and carious. The caries of the humerus was confined to that part of the bone contained within the capsule of the joint, and in which was found a small quantity of curdy pus. Three external sinuses between the muscles communicated with the joint.

#### 1828.

In the months of January and February of this year, scarlet fever prevailed, and sixteen had this disease, but it was of a mild character. There were also ten cases of chicken-pox. In the months of November and December *cynanche parotidea* was very prevalent among the children, and during those months thirty-seven had this complaint, from which it would appear to be a contagious disease, although I believe this is doubted by some. In several there was a great degree of fever, attended with much swelling of the parotid glands. I have never seen any instance of metastasis to the testes. The fatal cases were unusually numerous this year—the following were peculiar.

*Case 5*.—P. Field, aged seven years, was admitted into the hospital on 23rd January, 1828, with symptoms of typhus fever and affection of the chest—it might be termed typhoid pneumonia. There was early low delirium, great prostration of strength, and much dyspnoea, &c. He died on the 7th of February, fifteen days after his admission. During life it was remarked that the heart was felt pulsating on the *right* side of the chest; this could not be accounted for unless from original malformation, or from some large effusion of fluid on the left side, causing displacement by pressing the heart over to the other side: but there were no symptoms indicating any kind of effusion except a great degree of dyspnoea. And there was no malformation of the bones of the chest.\* The *post-mortem* examination which I shall now relate will explain the cause.

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\* Sir Charles Bell, in his work on Anatomy (Vol. 1, page 435, Edit. 1811), mentions an instance of "a boy eight years of age, who had a great collection of matter in the chest, whose heart was so displaced by a vast quantity (no less than

*Thorax*.—On opening this cavity the lung of the left side, which was very much larger than natural, and consisted of *three* lobes, was seen to occupy the whole of the left side of the chest, and to extend over to the right, as far as the commencement of the cartilages of the ribs of that side, displacing the heart by pushing it entirely over to the right, which side it nearly occupied, as only a very small portion of the right lung was visible, it being under the heart, flattened and compressed on the ribs and spine, to which and the *pericardium* the whole of this lung firmly adhered, requiring considerable force to separate them. This lung had only two lobes. The *left lung* had a few slight adhesions to the *pleura costalis*. On making incisions into the substance of the lungs, *both* were found to be partially hepatized, particularly the left, which was very large and heavy, and portions of it thrown into water immediately sunk.

On opening the *pericardium*, which contained no fluid, the heart was seen with its apex pointing to the right side, and the arch of the aorta so turned that the descending *aorta* continued its course down the left side of the *vertebræ*, as in ordinary cases.

*Abdomen*.—All the viscera of this cavity were in their natural position. The *spleen* was of a much harder and firmer consistence than usual, and a portion of its thin edge was white and of a cartilaginous hardness. All the rest of the viscera were of healthy appearance.

*Case 6*.—William Holt, *æt.* nine years, a scrofulous and delicate child, had been suffering under symptoms of dropsy and anasarca, with cedematous puffiness of face, and swelling of arms and legs, for some time. He had no cough, but occasionally his respiration was much affected, having great difficulty of breathing. He only complained now and then of pain in the abdomen. He died quite suddenly, without any increase of symptoms indicating his death. He went to bed on the night of the 16th February, much in the same state as he had been for two or three weeks before—at six o'clock the following morning the nurse found him dead.

*Autopsy*, 30 hours after death.

*Head*.—The brain and its membrane were in a healthy state, and nothing morbid was observed.

*Thorax*.—The right lung adhered firmly to the ribs, and on cutting into its substance, several masses of calcareous matter were seen, the size of large peas—it was otherwise healthy.

The *left lung* had no preternatural adhesions, but contained several small vomicae, and at the upper and posterior part there was a large mass of calcareous matter, equal in size to a small filbert; several smaller masses were also dispersed throughout its parenchymatous structure, this lung being much more generally diseased than the other.

The *pericardium* was thicker than usual, and contained upwards of a pint of serous fluid; its inner surface exhibited several vascular patches, and shewed evident marks of its having been inflamed. The *heart* was natural, but the right auricle and *venæ cavæ* were unusually full of dark grumous blood.

*Abdomen*.—There was about a pint of serous fluid effused in this cavity. The *liver* and *spleen* were of a bright red colour as if from increased vascularity, but their structure appeared healthy. The *mesenteric glands* were much enlarged. This is the only instance I have seen of so much calcareous matter in the lungs of a child, and I believe it is not a common appearance of disease in the lungs of young persons.

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four pounds) of pus, that it beat strongly on the right side of the breast while his disease continued, and as soon as the pus was evacuated, the beating of the heart returned naturally to the left side."

*Case 7.*—William Hynes, æt. nine years, was admitted into the hospital for disease of the spine, Aug. 10th, 1826, which had gradually progressed, resisting all the usual modes of treatment by issues, &c. &c. Notwithstanding the great excurvation of the spine, and extent of the disease, he had no paralysis of the extremities until the last two or three weeks of his existence. His appetite and digestion were always very good, his great suffering was from the difficulty of respiration, and the position he was latterly obliged to keep, for he could only lie on the right side, and when sitting up in bed always kept one hand up to his head to support it, his chin being protruded forwards, and the occiput thrown back between the shoulders. At length extensive sloughing of the right hip took place from his constantly lying on it, and he died on the 29th May, 1828.

*Autopsy*, 27 hours after death.

*External State.*—General emaciation of the body and limbs. The upper dorsal vertebræ excurved to nearly an acute angle the ribs much compressed, so as to considerably diminish the capacity of the thorax. An extensive slough on the right hip.

*Thorax.*—The lungs on both sides adhered firmly to the *pleura costalis*, and required considerable force to detach them from the ribs and spine; in doing which a large abscess was accidentally opened situated over the spinal column, extending longitudinally down the thorax, the sac of which covered the space from the last cervical vertebra to the eleventh dorsal, thus including 12 vertebræ, and contained upwards of four ounces of thick curdy pus mixed with fragments of the carious bodies of the vertebræ. The sac of the abscess, which was of considerable thickness, did not extend laterally beyond where the ribs are articulated to the spine. The whole of the bodies of the vertebræ included in the abscess were in a softened and carious state, and the intervertebral substance completely gone.

At the posterior part of the *left lung* was an abscess containing about an ounce of purulent matter, and another smaller one was found in the upper part of the other lobe of the same lung; the lungs on both sides were full of tubercles. The *pericardium* and heart were healthy.

*Abdomen.*—With the exception of the *mesenteric glands*, which were slightly enlarged and indurated, nothing morbid was observed.

This boy was of a highly scrofulous habit, and his case is remarkable from the extent of the disease affecting twelve of the vertebræ, viz. from the last cervical to the 11th dorsal inclusive.

The fatal case of *hæmoptysis* occurred in a boy nine years of age. He was admitted into the hospital on the 20th of June for a dry tickling cough without expectoration. On the morning of the 25th June he suddenly spat up while coughing about 3ij. of dark-coloured blood—at nine o'clock in the evening the hæmorrhage recurred, and he suddenly threw up a considerable quantity of blood, full a pint, and in a few minutes after expired. On the *post-mortem* examination, both lungs were found to contain tubercles and small vomice, and in the *left lung*, about two inches from the division of the bronchii, a large abscess was seen containing grumous blood and pus, making it quite evident from whence the hæmorrhage had proceeded. There was also in the cavity of the abscess a mass of calcareous matter nearly as large as a small filbert. The portion of lung forming the parietes of the abscess was indurated and hepatized.

*Case 8.*—John Sharkey, æt 11 years, was admitted into hospital on the 6th July for rheumatic inflammation of the *right knee*—in a day or two after, the left became similarly affected, and then the right wrist-joint, attended with severe pain and constitutional fever. He was bled generally and locally—took vin. colchici, calomel and opium, &c., but although the swelling, tenderness, and pain of the knee and wrist-joints subsided, the constitutional symptoms became aggravated, and what is rather remarkable, he did not complain of any pain in



his chest, nor had he any particular dyspnoea, but gradually sunk and died on the 16th of July, ten days after his admission into the hospital.

*Autopsy*, 40 hours after death.

*Thorax*.—Both lungs were perfectly healthy, the left having only some slight adhesions to the *pleura-costalis*. The *pericardium* was much thickened and unusually vascular, particularly towards the base of the heart. On opening it fell four ounces of sero-purulent fluid escaped, exhibiting the heart, which was of its natural size, completely encased with a thick coat of coagulated lymph, of a yellow colour, and having a honeycomb appearance. The inner surface of the *pericardium* had also many portions of lymph attached to it, connecting it by band-like processes to the heart. On removing a portion of the yellow coating of lymph from the heart the muscular substance was observed to be redder than usual, and the blood-vessels much injected. The inner coat of the *aorta* near the valves was also redder than natural.

*Abdomen*.—No morbid appearances whatever were observed here.

*Right Knee-joint*.—As the original seat of complaint was in this joint, it was examined. On cutting into it, about 3 iss. of thick yellow lymph was found effused, and the cartilaginous surfaces of the joint were much redder than usual; there was not however the least erosion of the cartilages of the joint.

The left knee-joint was also examined, and considerable redness and vascularity of the lining synovial membrane was observed, but it only contained a small quantity of the natural glairy synovial fluid.

There were five deaths from *hydrocephalus* this year, and all were scrofulous children.

In three the lungs were found to be much diseased, being partially hepatized and tubercular.

In two the thorax was not examined, but one of these had caries of the fibula, and the other caries of two of the lumbar vertebræ, for which complaint he was under treatment in the hospital, when suddenly symptoms of cerebral effusion appeared. I shall give the *post-mortem* appearances of this case.

*Case 9*.—*Autopsy* of E. Curd, aged nine years, 24 hours after death.

*Head*.—There was no unusual vascularity or turgescence of the vessels of the brain, on the contrary, the brain was paler than usual, and there was slight sub-arachnoid effusion. The lateral ventricles were much distended with a limpid serous fluid; nearly two ounces were collected; the brain here was very soft, and the *foramen morroianum* widely open.

*Thorax*.—The left lung was firmly and universally adherent to the *pleura costalis*, and when cut into was found much congested and gorged with blood, but free from tubercles. The right lung had only a few slight adhesions to the ribs, and was perfectly healthy in structure.

*Pericardium and heart* were natural.

*Abdomen*.—No morbid appearances whatever were observed in any of the viscera contained in this cavity. On removing the intestines, &c. two abscesses were perceived, one on each side of the two upper lumbar vertebræ; the one on the left side contained about an ounce of thick curdy purulent matter, that on the right a rather less quantity of similar fluid. The cysts were separate, no communication existing between them, and the bodies of the vertebræ, forming part of the boundary of the abscesses, were softened and carious; the disease, however, appeared to be in an early stage, for the front part of the vertebræ intervening between the two cysts had its natural appearance.

#### 1829.

Two cases of small-pox occurred this year. One a boy of nine years of age, the other twelve years. The former had a confluent form of the disease, leaving few slight marks on his face, and he had several small abscesses afterwards on

his head, the scalp having been much covered with the small-pox pustules. The latter had a very mild and modified form of the disease.

There were seven fatal cases this year. The following from jaundice may be deemed interesting.

*Case 10.*—Robert Naylor, aged twelve years, was admitted into the hospital on the 5th August with the symptoms of jaundice, constipated bowels, and great yellowness of the skin and eyes, &c. Notwithstanding a variety of purgatives, conjoined with calomel, the alvine evacuations always exhibited a white cretaceous appearance. Emetics were also employed. His pulse was of natural frequency, and only became slow and irregular when the cerebral attack came on, which was early on the morning of the 29th, when he was seized with sudden and violent delirium. He was bled, and leeches applied to the temples; he soon sunk into a state of coma, and died the next day, the 30th.

*Autopsy*, 32 hours after death.

The whole of the body externally was of an intense yellow colour.

*Head.*—The skull-cup adhered very firmly to the dura mater; the vessels of the brain were much injected, and the *membranes* of the brain were of a yellow colour and over the internal part of the bones of the cranium. The *lateral ventricles* contained about two drachms of a very yellow serous fluid.

*Thorax.*—The lungs and contents of this cavity were in a perfectly healthy state. The cartilages of the ribs were tinged of a deep yellow colour.

*Abdomen.*—The *stomach* was much contracted, and contained a quantity of dark-coloured fluid of tenacious consistence, similar to what he had vomited a short time before death. On removing this fluid several spots resembling ecchymosed blood were observed on its internal coat.

The *liver* was unusually small, of a yellowish colour, and much harder than natural. The gall-bladder was small, and contained a dark green or nearly black fluid, of very tenacious consistence, much resembling melted glue, so thick that the strongest compression or the gall-bladder could not force it through the *ductus choledochus*. On removing this tenacious fluid the internal coat of the gall bladder was seen to be unusually vascular.

The *mesenteric glands* were of healthy appearance, but between the folds of the mesentery there were several ecchymosed spots. The *spleen* was natural, and both the *small* and *large intestines* exhibited nothing morbid.

Jaundice is by no means an uncommon complaint among the children—but the above, and one other case exceedingly similar, which occurred in a girl ten years of age, in the year 1820, have been the *only two that have terminated fatally*.

The girl was to all appearance getting better, when, two days prior to her death, she was suddenly seized with a convulsive fit, without any premonitory symptoms whatever, indicating any affection of the head, and immediately after she became comatose, and remained so until she died. On a *post-mortem* examination upwards of an ounce of a deep yellow serous fluid was found in the *lateral ventricles*, the vessels of the brain were much injected, and the substance of both the brain and cerebellum were unusually soft. There were also about four ounces of serum effused in the chest, and one ounce in the *pericardium*. The *lungs* and *heart* were healthy. The *liver* was much smaller than usual, harder, and of a light yellow or straw colour. The *gall-bladder* perfectly empty and flaccid. The *stomach* was much distended with air, and contained nearly two ounces of a blackish, almost inky tenacious matter, which altered closely to the internal coat of this organ, but when this was scraped away, nothing morbid was observed.

#### 1830.

Five boys had small-pox this year, two of whom had it in a severe and con-

fluent form, and three in a mild and modified form. I may here state that, as a precaution, every child on admission is examined to ascertain whether he has had cow or small-pox, and the statement of the parent or relative who brings the child is not deemed satisfactory unless confirmed by evident marks of one or other of these diseases; if none are observed the child is immediately vaccinated.

It is remarkable that when small-pox does occur, the cases are solitary, or few, never spreading to any extent, though the highly contagious nature of small-pox is very well known, and more than three-fourths have only vaccination for their protection. Is not this a strong proof of its prophylatic power?

It certainly would be very desirable, (if ever possible,) to know how many years the preservative effect of vaccination remains. It appears to me that vaccination is often performed much too early, before the infant's constitution may be said to be formed, for instance when only a few weeks old: *three months* after birth would be a period more likely to be permanently beneficial, and the earliest I would recommend.

During the months of May and June measles prevailed, and 48 children had this disease. Of this number 22 had it severely, followed by diarrhoea and ophthalmia, and 26 had it in a mild form, and none proved fatal.

Among the fatal diseases of this year, the following may be considered interesting.

*Case 11.*—James Picken, aged 13 years, was brought to the hospital at one o'clock p.m. on the 18th March, vomiting blood copiously; the attack occurred suddenly, while marching with his company into the hall to his dinner. He expired in a few minutes after his arrival at the hospital, having vomited upwards of a pint of dark coloured frothy blood. He was constitutionally a very delicate child, had been in the hospital for an attack of hæmaturia in January, and was discharged well in February. He was not known to suffer from any pulmonary complaint before the occurrence of the hæmorrhage, although frequently seen at the hospital on account of chilblains, from which he suffered much. He never had any complaint of the urinary organs before the attack of hæmaturia in January, and which soon got well under treatment.

*Autopsy*, 46 hours after death.

*Thorax.*—The lungs on both sides presented a healthy appearance, except being in a highly congested state; there was a trifling *adhesion* of the *left lung* to the *pleura costalis*, at the posterior part near the spine. The *trachea* was full of dark-coloured blood; it was carefully opened, and the divisions of the bronchi traced into the lungs, which were found much congested and gorged with blood, but no particular part from which the hæmorrhage had proceeded could be distinguished, no cavity, cyst, or coagulum was seen. The pulmonary artery and veins were also carefully examined, but no lesion was detected. The *pericardium* and *heart* were natural, but both auricles and ventricles were quite empty, no blood or coagula being found in them.

*Abdomen.*—The *stomach* was distended with flatus, and was found to contain at least a pint of frothy grumous blood. On removing which, this organ was found to be perfectly healthy. The *liver* and large and small intestines exhibited a healthy appearance. On removing the latter the ureters were seen enormously enlarged, about half an inch in diameter; the point of the little finger could with ease be introduced into both these canals, and which were thus enlarged throughout their whole course to the bladder. The greater part of the glandular substance of the *right kidney* was wasted, and the pelvis formed a very large pouch or sac, and what little remained of the glandular substance was pale, soft, and flabby. The *left kidney* did not exhibit any morbid appearance, except a great enlargement of the pelvis and its ureter.

The bladder was strongly contracted, and contained about 3ij. of straw-coloured urine; its internal surface was rather more vascular than natural.

It is rather extraordinary that so much disease of the kidneys and ureters should not have been made more manifest by symptoms during life.

The following is a remarkable case of a fatal obstruction and inflammation of the bowels caused by a preternatural pouch of the ileum, or *diverticulum ilii*, as it is termed by anatomists.

*Case 12.*—Edwin Mills, a stout healthy boy, 12 years of age, had been out on pass at Easter for a couple of days to see his mother. On his return here in the evening of the 11th April, he drank very copiously of cold pump-water, and went to bed. The following morning, at 9 o'clock, he was brought to the hospital, complaining of violent pain in his belly, particularly at the navel, with constant vomiting, and much general distension of the whole abdomen, which was also very painful when pressed upon. Pulse very small and quick; tongue covered with a yellowish fur; bowels constipated; countenance expressive of great anxiety and depression. Says he has not eaten anything likely to have disagreed with him, except a mince pie.

Bleeding, both general and topical, calomel and colocynth pills, purging enemata, fomentations, warm bath, blisters, &c. were successively employed without producing any beneficial effect. His pulse rapidly sunk and soon became imperceptible, the bowels remained obstinately obstructed, and the stomach constantly rejected everything he took. He died in thirty-six hours from the first attack. The symptoms were so similar to those of strangulated hernia, that it was suspected to be a case of intus-susception. The following *post-mortem* examination sufficiently explains the cause of death.

*Autopsy*, 38 hours after death.

*External appearance.*—The abdomen was excessively swollen and discoloured, of a dark green colour, with much general lividity of the whole body, and a great quantity of yellowish fluid had escaped from the mouth since death.

*Thorax.*—The lungs, heart, and pericardium were perfectly healthy.

*Abdomen.*—On opening this cavity about eight ounces of bloody serum flowed out. The *small intestines* were seen to be highly vascular, of a pinkish colour, encircled with numerous red vessels, and enormously distended, partly by air, but chiefly with a very large quantity of a turbid yellowish fluid, having a great number of small black currants floating in it. There must have been at least three quarts of this fluid in these intestines.

A singular appearance was now observed in the lower part of the abdomen. An adventitious portion of intestine in the form of a pouch, or cul-de-sac, somewhat resembling the finger of a glove, four inches in length and of a dark purple colour, was seen rising from among the convolutions of the ileum lying above the brim of the pelvis, and firmly attached at its upper or blind extremity to the umbilicus by a strong ligamentous cord, an inch and a half in length.

By tracing the intestines, the pouch was found to originate in the ileum, about fifteen inches from its termination in the *cæcum*, and this lower portion of the intestine was much contracted in diameter, of a livid purple colour, and only contained a very small quantity of bloody serum.

It now became evident that the convolutions of intestine which lay between the pouch and the *cæcum*, had got so compressed and strangulated that the canal was completely obstructed, for the livid colour commenced abruptly at the place where this pouch originated; and when the parts were *in situ* the ligamentous cord attached to the *umbilicus* was tense, and greatly on the stretch.

The *large intestines* did not exhibit any unusual vascularity.

The *cæcum* was not bound down closely to the *iliacus internus* muscle by the peritoneum, as usual, but a kind of *meso-cæcum* was formed, which allowed it to lay quite loose. It was much distended with air, and also the colon, both of which contained a large quantity of thick fluid resembling gruel, with oil floating in it, and apparently was part of the *glysters* which had been injected.

The *sigmoid flexure* of the *colon* and the *rectum* were small and much contracted. There were no solid feces throughout the whole of the intestinal canal.

The *mesenteric vessels* were gorged with blood, particularly those of the lower strangulated portion of the ileum.

The *stomach* was greatly distended with air, it also contained above a pint of the same kind of turbid yellow fluid found in the small intestines, with numerous black currants in it. On removing the contents, a very slight redness only of the internal surface was observed.

All the remaining viscera were in a perfectly healthy state.

From the annexed drawing, taken at the time by a professional friend, who was present at the *post-mortem* examination, the peculiar appearance of the parts will perhaps be more accurately understood.

Anatomists have frequently noticed this kind of *lusus nature*, or preternatural pouch, occasionally found in the *intestinum ileum*, and which they have denominated *diverticulum ilii*. I have twice seen this occurrence in the bodies of children, who had died from another cause, quite unconnected with this *lusus nature*.

I have lately read in the first volume of the American Medical and Philosophical Register, published at New-York in the year 1814, (which accidentally came into my hands,) a case in many respects very similar to the one just narrated, but occurring in an adult.

As this publication is probably not much read in this country, I shall here transcribe the case.

Case 13.—“Case of Enteritis, accompanied with a preternatural formation of the Ileum. Communicated to the Editors of the American Medical and Philosophical Register, by John W. Francis, of New-York, June 4th, 1810.

The writer of the following paper was an eye-witness to most of the facts which he relates. They are taken from memoranda made at the request of his preceptor, Dr. David Hosack, in whose practice the case occurred.

On the morning of December 22nd, 1809, Dr. Hosack was requested to visit a Captain D——, aged about thirty-five, of a slender habit of body, who was represented to be in an alarming condition. At the first view of the patient, it was perceived that he was afflicted with all the symptoms characteristic of enteritis, accompanied with those of ileus; viz., an acute and constant pain in the whole abdominal region, particularly about the umbilicus: the abdomen greatly distended, hard, and extremely sensible to the slightest touch, or whenever he attempted to move: vomiting of stercoraceous matter, and constipated state of the bowels; pulse small, tense, and frequent; respiration hurried and anxious; countenance livid; heat of the body increased somewhat beyond its natural temperature; and excessive thirst. These symptoms were attended with a great prostration of strength, and an extreme degree of restlessness.

Upon inquiring into the history of his complaint, it appeared that he had been first attacked while at the theatre on Wednesday evening, the 20th. On the morning of the day following, he was visited by an eminent physician, who directed an anti-spasmodic mixture, the symptoms of his disease being, at that time, slight. Deriving no relief from the medicine prescribed, Dr. Hosack was called upon on Friday morning, the 22nd, between the hours of eight and nine, when he found him labouring under all the symptoms above described.

From the best information that could be obtained, it was rendered highly probable that the exciting cause of his complaint was cold. He had been repeatedly subject to attacks of this kind, though less violent than the present, for several years past; at which times he was relieved by the ordinary method of treatment.

mediate recourse was now had to the lancet, and he lost blood to the amount of seven ounces.

A cathartic, composed of the pulv. jalap, and submuriate of quicksilver, each ten grains, was directed to be given, which was rejected in about an hour after he had taken it; and a similar one repeated with the same result. Blisters were applied near the umbilicus; fomentations of vinegar and water over the whole abdomen; and enemata of the oleum ricini and tinct. assafœtid, were administered. These were partly discharged by vomiting; which afforded abundant proof that an inverted action of the whole intestinal canal had already taken place. In the afternoon the several applications to his surface were repeated; and during the remainder of the day he took, in divided doses, no less than two scruples of the submuriate of quicksilver, combined with opium and camphor; which, however, were rejected by vomiting shortly after they were taken. The enemata, rendered more active, were again given, but with no advantage.

At this time Dr. Miller visited the patient, in conjunction with Dr. Pott and Dr. Hosack. They united in recommending a continuance of the same mode of treatment that had been pursued.

In this condition he passed the night; the constipation of the bowels obstinately resisting every means used to obtain an evacuation.

On the morning of the 23rd the submuriate of quicksilver, combined with opium, was again directed, in doses of 15 grains every two hours. The warm-bath was at the same time employed. It produced a temporary mitigation of his symptoms, but left him still more enfeebled.

His fate, which for some time had been probable, now became almost certain. The vomiting, which within the first thirty hours from the commencement of his disease had become stercoraceous, and which had continued with but little intermission to the present time, was now renewed. Attempts were made to allay it by the free use of opium, and other remedies usually indicated under similar circumstances.

The effect was an aggravation of all the symptoms. At 10 o'clock, P. M., his dissolution was momentarily expected, his pulse scarcely perceptible, and his extremities cold.

He expired on Sunday morning, the 24th, at six o'clock, the vomiting having been incessant until about twenty minutes before his death.

*Morbid appearances on Dissection.*—At two o'clock in the afternoon, the body was examined in the presence of the attending physicians, and several other professional characters.

The abdomen was tense and greatly distended: upon making a longitudinal incision into it, a considerable quantity of serous fluid issued out. Having completed the division, the intestines were found in a highly inflamed state, and of a dark red colour: the peritoneum lining the abdomen was also much inflamed, and covered with coagulable lymph. A remarkable deviation from the ordinary structure of the parts was now discovered to exist: a portion of intestine, attaching itself to the umbilicus, formed a union between it and a part of the intestinal canal. Upon further examination, this appendix was observed to be a *diverticulum* from the ileum. At the place of its union with the ileum it was enlarged and inflamed, in common with the upper portion of the small intestines; the remaining part was of a natural colour, and so intimately connected by its blind extremity at the umbilicus, as to leave little doubt of its being an original malformation. The ileum above this appendix was very much inflamed, extremely vascular, and in size equal to the transverse colon; while the lower portion was greatly contracted, and twisted round the diverticulum; and in this manner had been the means at least of aggravating, if not of inducing, the inflammation, and its consequences in this particular part of the intestinal canal. This portion of the ileum was of a dark, livid appearance, and had lost its tenacity. The great intestines were found completely emptied of their contents, and preternaturally contracted in their diameters throughout their course.

The *omentum*, *transverse colon*, and *stomach*, were at first altogether concealed

by the distended state of the small intestines; and found in close contact with the diaphragm.

The *omentum* was irregularly drawn together. No unnatural appearance of the transverse colon was remarked.

The stomach lay in a circumscribed situation, was not more than two inches in width, and contracted in the same proportion throughout its whole extent. It was entirely empty; upon a minute inspection, no discolouration or affection of its coats were seen."

*Case 14.*—Samuel Tailby, aged 14 years, was admitted into the hospital on the 29th May, 1829, with pain in the left hip and limping, which he attributed to a fall he had down stairs several weeks before. It was soon perceived that there was incipient disease of the hip-joint from the lengthening of the limb and other symptoms. By means of rest, cupping, leeches, blisters, and an issue, the disease was apparently subdued, and at the end of September following he was so much better that he was allowed moderate exercise on crutches, but not to rest on the diseased limb. His general health at this time was very good, and the issue was nearly healed. He continued apparently well without any pain in his hip until the 5th February, 1830, six months after all the symptoms had subsided, when he had a return of pain in the part—most probably from his using the limb too freely, it being very difficult to prevent him from walking more than he should have done; and he was frequently detected doing so without his crutches. In a few weeks an abscess formed in the front of the thigh; it was punctured, and much purulent matter evacuated; other abscesses formed, hectic fever supervened, and the disease proceeded with rapid strides, causing great disorganization of parts, to a fatal termination, which took place on the 4th June, 1830.

*Autopsy*, 26 hours after death.

*External appearance.*—Great emaciation of the arms and trunk of the body: both lower limbs were much swelled and oedematous, particularly the diseased one, and the oedema extended to the loins. The right hip was inflamed and ulcerated from the effect of pressure, and also the lower part of the spine. There were several ulcerated apertures and sinuses between the muscles of the left thigh, leading to the abscess in the hip joint. The *femur* was dislocated on the dorsum of the ilium, and had ulcerated its way out, so that the *trochanter-major* was seen protruding through a large ulcer on the nates. The integuments of the nates and thighs were of a livid purple colour, and in a state of incipient gangrene. An erysipelatous inflammation had appeared on his thighs the day before his death, and the cuticle was extensively separated by infiltration of a serous fluid.

*Thorax.*—With the exception of the *lungs* having a few slight adhesions to the *pleura costalis*, the viscera of this cavity were in a healthy state.

*Abdomen.*—The *liver* was smaller than usual, of a pale yellow colour, and its substance softer than natural. No other morbid appearances were observed here.

*Left hip-joint.*—An extensive incision was made from the opening for the evacuation of the first abscess, which formed in front of the thigh towards the knee, and this exposed several sinuses among the muscles of the thigh communicating with the joint, and containing a fetid sero purulent matter. The muscles of the thigh and hip were of a pale colour and of a soft pulpy consistence, apparently caused by the serous effusion and purulent matter. The capsule of the joint was destroyed, and of the acetabulum, only a small portion was left, and that was in a complete state of caries, from which a sinus was discovered leading to a formation of purulent matter within the pelvis, between the *iliacus internus* muscle and the concavity of the ilium; the surface of that bone being also in a corroded state.

The head of the thigh bone was laying on the dorsum of the ilium completely carious, divested of all cartilage, soft and spongy, and the neck and shaft of the

bone was partially corroded as far as the *trochanter-minor*—the *trochanter-major* had its natural appearance. The muscles of the nates immediately surrounding the diseased bones were in a sloughy and disorganized state.

## 1831.

Whooping-cough prevailed during the Winter months of this year. Twenty-three children had this disease, one of whom, a weak and puny child of six years of age, died from it. As there was a remarkable similarity to the case of Alfred Green, who died of this complaint in 1826, I shall transcribe it from my notes.

*Case 15.*—John Kennedy, aged six years, a puny and delicate child of scrofulous habit, was admitted into the hospital, with whooping-cough, on the 30th of October. The paroxysms of coughing were very severe, attended with fever, causing great exhaustion. At length ulceration and gangrene of the mouth and cheek appeared, with petechiæ on the skin, and other symptoms of extreme debility. Wine and tonics were given, the cough having ceased for about a fortnight before his death, which occurred on the 16th December.

*Autopsy*, 28 hours after death.

*External appearance.*—Great general emaciation, the abdomen was speckled with small spots of petechiæ, above the clavicles, and on the sides of the neck were large ecchymosed purple spots or vibices. The greater part of the scalp was covered with small ulcerated spots, especially on the occiput. There were two sloughy ulcers at the angles of the mouth, with sloughing of the gums, and incipient gangrene of the left cheek.

*Thorax.*—The lower portion of both lungs were slightly adherent to the *pleura costalis*. On cutting into their substance, numerous small tubercles and vomices were seen, but none of the vomices exceeded the size of a pea.

*Pericardium and heart* were natural.

*Abdomen.*—The viscera of this cavity had a healthy appearance, but at three separate places intus-suscepted portions of the intestinum ileum were observed.

Among the other deaths which occurred this year the two following may be deemed worthy of notice. One from an abscess in the brain, and the other from rheumatic carditis.

*Case 16.*—Duncan M'Craig, aged eight years, was admitted into the Asylum on the 24th October, 1831, when he appeared to be in good health. On the following day he was brought to the hospital on account of refusing his food. He made no complaint but want of appetite, and had no febrile symptoms. Tongue clean; pulse natural. A purgative was given; and on the 26th he was dismissed, having no apparent complaint. On the 31st Oct. he was again brought to the hospital, still having no constitutional disturbance; but it was observed that he was inactive and dull, continuing to refuse his food; he now also complained of headache, particularly on the left side of his forehead; and at this part, about an inch above the superciliary ridge of the frontal bone, there was a small inflamed spot, somewhat resembling a small boil, from which a few drops of purulent matter were pressed out. On being questioned whether he could account for the pain in his head, he said he had had a fall in the street a week before his admission here, and struck the left side of his forehead against the ground; but the skin was only slightly bruised, and he neither felt sick at the time nor afterwards. His tongue was clean; bowels torpid. A dose of scammony and calomel was given him, and a bread poultice applied to the boil on his forehead. In three days the boil was healed, very little discharge having come from it, and only a small cicatrix remained. During this time he did not complain much of his head, and was walking about the ward.

No alteration took place until Nov. 5th, when febrile symptoms appeared; the tongue was slightly furred, skin hot, and increased pain in his forehead. Leeches



were applied to the temples, a brisk cathartic or jalap prescribed, followed by saline medicine. There was nothing unusual in the alvine discharges. This was the first day that any serious affection of the head was indicated.

7th. The febrile symptoms were much moderated, and he said his head felt better; he dozed a great deal, and disliked to be disturbed, but was perfectly sensible, and the pupils of his eyes were neither unnaturally dilated nor contracted.

8th. This morning his pulse was found to be remarkably slow (60 in a minute); tongue more furred, and his bowels were torpid. He did not complain much of his head, but when he did he always pointed to the left side of his forehead. An emetic of ipecacuanha was prescribed, followed by calomel and rhubarb. At the evening visit, seven o'clock, the emetic had operated gently, but little was charged; and he had had two scanty alvine evacuations. Pulse 60, small, as in the morning; skin of natural temperature, and he appeared to be in a tranquil sleep.

During the night the nurse, hearing him make a moaning noise, went to him; he was perfectly sensible, spoke to her, and said he did not want anything. At six o'clock the following morning (Nov. 9th) the nurse found him dying, and he soon after expired.

*Autopsy.* 29 hours after death.

*Head.*—On reflecting the scalp from the bone, particular attention was directed to the left side of the *os frontis*, where the boy had complained of most pain. A small carious perforation of the bone was there perceived, about an inch above the superciliary ridge, which would admit a small-sized probe; and the bone round this hole had a dull red appearance, apparently from increased vascularity. The internal surface of the scalp had a small dimple-like depression, corresponding to the hole in the bone, and the minute cicatrix on the skin of the forehead, left by the healing of the boil. The *calvarium* was now removed, and which adhered less strongly to the *dura mater* than is usual in young subjects. On the internal surface of the *os frontis* a small prolongation, about the thickness of a probe, was seen proceeding from the *dura mater* to the perforation in the bone, resembling a vein or vessel entering it; immediately above which was a small spot of ecchymosis on the brain, about the size of a sixpence. The *dura mater* was now reflected; no particular vascularity or turgescence of the vessels of the brain was observed; but the anterior lobe of the left hemisphere appeared of a straw, or greenish-yellow colour, evidently denoting the site of an abscess, with distinct fluctuation when pressed. The posterior lobes were of natural appearance, as well as the whole of the right hemisphere. The *right side* of the brain was now sliced down to the lateral ventricle; on opening which a small quantity of limpid fluid escaped. Attempting to do the same on the left side, the brain gave way, and about *two ounces* of bland inodorous pus gushed out, and the cyst of an abscess became apparent. The posterior part of the left lateral ventricle was also found filled with pus; but it was difficult to say whether it had existed there prior to death, or took place from the bursting of the cyst of the abscess during the dissection. The thinnest part of the cyst was at the anterior part, near the ecchymosed spot, just above the perforation in the frontal bone. The cavity of the cyst was vascular and of a dark red colour.

The *cerebellum* was natural. The *thorax* and *abdomen* were examined, and the viscera of both these cavities were in a healthy state; but there was a small *diverticulum ilii*, or preternatural pouch, three inches in length, proceeding from the intestine ileum, at the distance of fourteen or fifteen inches from its termination in the *cæcum*.

The efforts of nature to make an outlet for the matter in this case are well worthy of observation. A little process or prolongation, like a duct, of the thickness of a probe, extends from the abscess and *dura mater* to the frontal bone, through which a perforation is made, by the action of the absorbents, to the integuments of the forehead, where a small boil forms and breaks, thus making a

direct external opening, communicating with the internal abscess in the brain, which, consequently, may be said to have broken externally.

This must have been a chronic abscess of the brain, originating independently of the fall, although that accident may have accelerated the fatal termination, for it is scarcely probable that so large a collection of matter could have formed and made its way externally, in the manner above stated, in so short a space of time as from the date of the fall (about three weeks), and with so little constitutional irritation.

His mother being questioned about his fall, corroborated the boy's statement, and said that it was only a slight cut or graze; she did not consider the hurt of any importance; but added, that he was always a very delicate child, not only as regarded his food, but in many other respects, and was possessed of great mental sensibility. Having lost his father about three months ago, he had fretted much on that account, and never was playful like other children subsequently to his father's death. With regard to the suddenness of his decease on the morning of the 9th November, may it not have been owing to the abscess having suddenly burst into the left lateral ventricle; for it is to be remarked, that there were no symptoms of effusion in the brain, no dilatation of the pupils, no coma, the boy being perfectly sensible to the latest period at which he was seen prior to death.

*Case 17.*—Chas. Mahon, aged 14 years, was subject to acute rheumatism, and which had evidently produced hypertrophy of the heart. In appearance he was a remarkably fine, stout and healthy looking boy. His heart was felt beating strongly against the ribs at all times and when otherwise apparently quite well. This inordinate action of the heart was first perceived in Jan. 1830. He was occasionally bled from the arm, and locally by leeches over the region of the heart, and kept on low diet, with amelioration of the symptoms—which were chiefly embarrassed breathing and quick pulse. It was also observed that there was a remarkable difference in the strength of the pulse of the left arm compared to the right, being strong, full, and bounding in the former, and small, sharp and thrilling in the latter. From the 27th April, 1830, when he was dismissed from the hospital, until the 10th Dec. 1831, he remained apparently well, except the chronic disease of the heart. He was as much as possible restricted from using much exercise, and his respiration during this time was not particularly affected, he also became fat and muscular. On the 10th Dec. he was admitted for another attack of acute rheumatism. His wrists, knees, and ankles were affected in succession, and he had high inflammatory fever. He was copiously bled, and took calomel and opium, colchicum, &c. Under this treatment, in about a week, he apparently got much better, a relapse, however, took place, and the rheumatic inflammation attacked his heart, occasioning pain and excessive dyspnoea, occurring in severe paroxysms, threatening immediate suffocation—the disease having then left the joints. As for a long time he was known to have enlargement of the heart a fatal result was anticipated, and he expired suddenly on the evening of the 31st of Dec. 1831.

*Autopsy*, 61 hours after death.

*External appearance.*—The body presented a remarkably well made and symmetrical form, stout and muscular. The chest was ample, but a slight projection of the ribs on the left side was evident, over the situation of the heart. The left wrist and both ankles were slightly oedematous and puffy—the parts which were last affected with rheumatic inflammation.

*Thorax.*—The lungs on both sides were adherent by apparently recent prolongations of coagulated lymph to the *pleura costalis*, and about two ounces of bloody serum were effused on each side. The lungs at their posterior part were slightly emphysematous, but were not otherwise diseased in structure.

The *pericardium* was enormously distended, occupied a great part of the front

of the chest, and before it was opened measured  $7\frac{1}{2}$  inches across in a horizontal direction. It was perceived that the base of the heart adhered to the pericardium in such a way as to form two pouches, one on each side, which were full of fluid, and completely altering the usual form of this bag. The pericardium was now opened, and twelve ounces of bloody serum were found in it; its internal surface was of a dark red colour, and covered with papillæ-like projections and much thickened; there were also vascular productions proceeding from it to the heart, the muscular substance of which was covered with similar papillary granulations.

The heart was enormously enlarged and highly vascular, and there was a pendulous fleshy projection of a cartilaginous hardness, nearly an inch long, at the upper part near the origin of the left auricle. On opening the cavities, the interior lining of the auricles and great blood-vessels were found of a deep red colour. The parietes of both ventricles were considerably thicker than usual. The heart with its investing pericardium, (after the evacuation of the fluid) was found to weigh 1lb. 13oz. avoirdupois. Now, according to the average healthy standard weight of organs, as obtained from the Croonian Lectures for 1833, delivered by Dr. Clendinning, and published in the London Medical Gazette, the average weight of the heart of an adult male, above puberty, is calculated at only nine ounces avoirdupois. This may give some idea of the very large size of the heart in the case above detailed, which, including the pericardium, weighed 29 ounces!!

In the case of rheumatic inflammation of the heart, which occurred in 1828, there was no increase of its size, and although carditis has not unfrequently occurred among the children, and generally accompanied with rheumatism, I have never seen such an increase of the muscular substance as in the above instance.

#### 1832.

There was one case of small-pox this year, a boy eight years of age, who had a mild and modified form of the disease.

In the month of May, a boy, aged eleven years, suffered amputation of the leg below the knee, for scrofulous disease of the ankle-joint, which did well.

Nine deaths occurred this year; I shall give a brief detail of one of those who died of phthisis pulmonalis, in whom an abscess in the right lung had made its way through the diaphragm and appeared below the ribs near the spine.

*Case 18.*—John Murphy, aged eight years, a boy of a highly scrofulous habit, with deformity in the chest, it being smaller than natural, compressed at the sides, with the sternum projecting in front, forming what is termed a *chicken-breast*, had been in hospital for some considerable time with symptoms of pulmonary consumption. He was also subject to occasional convulsive fits, at which time, his face and lips were of a livid purple hue, and these were always relieved by a small bleeding from the arm. On the 19th November, for the first time, a small fluctuating tumour was perceived immediately below the ribs on the *right side*, about four inches from the spine. On coughing an impetus was distinctly felt in the part. The swelling gradually increased, without any discolouration of the skin, and descended towards the posterior part of the crista of the ilium forming a large oblong fluctuating tumour. On the 9th December, he was seized with sudden and severe dyspnoea and great pain in the situation of the swelling, accompanied with a rapid, small pulse, and great anxiety.

A canet was passed into the tumour, when nearly a pint of thick, fetid pus gushed out, and which, on his coughing, was jerked out the distance of several inches. He was much relieved by this operation, particularly in his respiration. Hectic fever, however, continued with rapidly increasing emaciation, and purulent matter, was spontaneously evacuated, in variable quantity, from the punc-

ture until his death, which took place on the 8th February, he was then reduced to a mere skeleton.

It is worthy of remark, that there was no expectoration of any kind, until about a week prior to his death, when he began to expectorate purulent matter, mixed with blood.

*Autopsy*, 26 hours after death.

*Thorax*.—The left lung was firmly adherent to the ribs and the pericardium; but only a small portion of the superior part of the *right* lung was adherent to the upper part of the ribs, the cavity on this side of the chest contained nearly a pint of thick purulent matter; the *pleura costalis* was covered with a thick layer of coagulated lymph, and the lung of this side was broken down in shreds, ragged, and ulcerated.

It was then ascertained that the pus had perforated the diaphragm and descended behind the peritoneum downwards towards the pelvis, and communicated with the opening which had been made by the lancet.

The *left lung* when incised was found to be full of tubercles and vomicae, scarcely any portion of it being of its natural structure, indeed it is surprising how respiration could have been performed, both lungs being so extensively diseased.

The *pericardium* adhered closely to the lungs and surrounding parts, and contained only a very small quantity of serous fluid. The *heart* was rather small, and on opening its cavities the *foramen ovale* was widely open, a large swan quill could easily be passed through it, and the ordinary valvular fold was so little developed, that it could scarcely have prevented some portion of venous blood from constantly passing into the left auricle.

*Abdomen*.—The *liver* adhered by prolongations of coagulated lymph, or false membrane, to the under surface of the diaphragm, but its substance was healthy.

Several of the *mesenteric glands* were much altered in structure; being of a cartilaginous hardness, but not much larger in size than natural—the rest of the viscera were normal.

### 1833.

Two cases of small-pox occurred this year; both were of a mild and modified form.

The spring of this year was remarkable on account of an epidemic catarrh, or influenza, which prevailed generally all over England. It commenced among the children here on the 5th of April, and continued to prevail until the 11th of May; during this period 130 were admitted into the hospital for this complaint. The catarrhal symptoms were, in many instances, very severe at the commencement with much fever, delicate children suffered greatly, and were ill for some time, but a great many others were quite well in a week or ten days. Relapses also were not unfrequent.

The officers and servants of the Institution were not exempted from this epidemic, and nearly the whole of them were more or less affected by it.

With regard to the treatment—saline aperients, demulcent remedies for the cough and hoarseness, and blisters where there was much difficulty of respiration were employed, but, as in almost all cases, much languor and prostration of strength existed, venesection was rarely performed; leeches and blisters were, however, had recourse to, in those instances in which urgent symptoms resembling pneumonia appeared.

There were three deaths this year; the one caused by caries of the cervical vertebrae and abscess of the lungs, I consider worthy of record.

*Case 19*.—James Irving, aged 12 years, of a highly strumous habit, and having a narrow and deformed chest, was admitted into the hospital on the 3d of

October, 1832, on account of pain and stiffness at the back of the neck, with enlarged lymphatic glands on each side, immediately below the mastoid processes. These went on to suppurate, and then general swelling of the posterior part of the neck took place, and gradually increased, notwithstanding leeches, cupping and blisters, were successively employed. At length, a deep collection of matter formed among the muscles at the back part of the neck, attended with great constitutional irritation. It became necessary to open the abscess, which discharged a thick curdy pus, and was found to communicate with the vertebræ. Other small abscesses formed and were opened, forming deep sinuses, from which a profuse discharge of curdy purulent matter issued. Hectic fever became established, and great emaciation ensued. About a fortnight before his death, a swelling was observed just above the right clavicle, which became prominent when he coughed, and which subsided when the cough ceased; it was soft to the touch, and could be easily pressed down below the clavicle. The impulse given to the hand placed over it, when he coughed, at once proclaimed it to be an abscess within the chest.

He was for months before his death unable to hold up his head without support, and was constantly in the habit of supporting it with one of his hands. His head was generally bent forward with his chin resting on the sternum. His appetite for food was very good until within a week or two of his death, he slept tolerably well, and did not complain of much pain, except when the formation of an abscess took place, had very little cough, and did not expectorate purulent matter, but died completely exhausted on the 12th December, 1833.

*Autopsy*, 36 hours after death.

*External appearance*.—Great emaciation of the body and limbs, a flattened and mal-formed chest. Much enlargement, and general thickening of the integuments at the upper and posterior part or nape of the neck, with three fistulous orifices leading to the uppermost cervical vertebræ.

Two extensive ulcerations on each side of the neck, in front, just above the clavicles.

*Thorax*.—The *right lung* was generally and firmly adherent to the *pleura costalis*, and adjacent parts, particularly at its upper part just below the first rib, and here a large abscess was found in the substance of the lung, sufficiently large to contain a hen's egg, full of sanio-purulent matter. On making further incisions, numerous vomiceæ, and hard tubercles were seen throughout its substance.

The *left lung* had only a few slight adhesions to the ribs. On cutting into its substance several small tubercles were seen, but none in a state of suppuration.

*Abdomen*.—The *viscera* in this cavity were perfectly normal, except a few patches of small tubercles of the size of mustard seeds, dispersed on the external surface of the small intestines.

*Cervical Vertebræ*.—The whole of these vertebræ were removed, and on examination a considerable quantity of thick purulent matter was found within the *theca vertebralis*.

The first second, and third vertebræ were in a complete state of caries, particularly the *atlas* and *dentata*, the cartilages on which the condyloid processes of the occipital bone rest were corroded, and the *processus dentatus* of the second vertebra was entirely destroyed by the caries. Tortuous sinuses, which opened externally, communicated with the three first vertebræ, to which the disease was confined, the remaining cervical vertebræ being in a natural state.

1834.

In the month of March of this year measles appeared among the children, and continued until the 5th of April; there were 48 cases, none of which proved fatal, although many were very severe. Immediately this complaint ceased,

scarlet fever broke out, the first case admitted being on the 4th of April. It continued to prevail during the Spring and Summer, until the 31st July, during which period 36 children had this disease. It re-appeared in November and December, two cases occurring in these months, and so carrying it on to the subsequent year. Of this number, 22 had *scarlatina mitis*, which in one boy was followed by general anasarca, but he recovered; and 16 had *scarlatina anginosa*, with considerable affection of the throat and fauces. One of these died in 57 hours after the attack, and being the only case of scarlet fever which has proved fatal out of 139 cases that have occurred within the period embraced in this Report, I shall give an account of it.

*Case 20.*—James Hawkins, aged 14 years, a boy of strumous habit, belonging to the band, was admitted into the hospital, June 5th, complaining of chilliness, nausea, sore throat and head ache. Countenance dejected and pallid. Tongue covered with a thick yellow fur. Tonsils inflamed, enlarged and covered with ash-coloured sloughs—pulse very quick and small. He was ordered an emetic followed by 3 grs. of calomel, and a rhubarb draught, which operated well. June 6th, has had a very restless night, and appears much worse this morning, being in a comatose state, and cannot be made to answer questions. He keeps his teeth closed, so that it is almost impossible to inspect the throat; but what can be seen of it, is covered with dark-coloured sloughs,—breathing rattling, and difficult—pulse rapid and small, 130 to 140. A faint scarlet eruption covers the chest and thighs, external swelling of the throat from enlargement of the lymphatic glands. Skin nearly of natural temperature. He will not take medicine. Wine, orange and lemon juice were put into his mouth, and the throat and fauces syringed as much as could be done with a solution of the chloride of soda. In the evening he was put into a warm bath for a few minutes, there being a disposition to convulsions, and four leeches were applied below each ear, there being much external swelling. He continues in the same comatose state. The eruption continues out, but is of a pale red colour.

*June 7th.*—Has had a restless night with much jactitation, he however appears more sensible, but cannot speak, and it is with the greatest difficulty that a teaspoonful of any fluid can be swallowed. *Sesqui-carbonate of ammonia* in camphor mixture was tried, and the *linem. ammoniæ fortius* applied round the throat. About two o'clock, p.m. he was evidently sinking, and lay in a complete state of coma, extremities cold—pulse small, rapid and irregular, and died exactly at six o'clock, fifty-seven hours from his admission into the hospital.

*Autopsy*, 24 hours after death.

*Head.*—The *dura mater* and surface of the brain was very vascular, and numerous bloody points were seen on slicing the latter down to the ventricles, in which no fluid was found, but the lining of these cavities was much injected, and the *plexus choroides* unusually turgid. The sinuses of the brain were gorged with blood.

*Thorax.*—The *right lung* was partially adherent to the *pleura costalis*, but its structure was perfectly healthy. The *left lung* adhered firmly to the ribs and adjacent parts; but on cutting into its substance it was found healthy and crepitating.

*Pericardium* and *heart* normal. The tonsils and posterior fauces were in a sloughy state, quite black. The *trachea* was examined, its internal lining was more vascular than natural, but there was no deposition of mucous or coagulated lymph.

*Abdomen.*—The small intestines appeared much congested, and the arteries and veins which surround them were distinctly and beautifully exhibited. The liver healthy—gall-bladder much distended with dark green bile. The *mesenteric glands* were enormously enlarged, several being converted into a decided calca-

reous matter, and others were of a caseous consistence. This boy appeared never to rally from the stage of collapse caused by the contagious virus.

Incontinence of urine is a very common complaint among the children here, and difficult of cure, in some cases dribbling from them during the day, but in the greater number it only occurs at night when in bed.

For this complaint I have employed tonics, as quinine and steel, also tr. cantharides, blisters over the sacrum, cold-bathing, &c., with variable success, and in some instances I have found the occasional passing of a catheter or steel sound prove beneficial, perhaps fear may have some effect in the latter case, as the children have generally a great dislike or even dread of this operation. In some instances, however, all remedies have proved ineffectual, and time alone has effected a cure, the habit ceasing as they approach puberty.

*Case 21.*—Among the many boys brought to the hospital for this complaint, was one named J. Hunt, aged six years and a half, who was in the constant habit of wetting his bed at night, but the incontinence did not happen in the day time, although he made water rather more frequently than natural. He was a delicate puny child, and born in the East Indies. He suffered very little pain, and had no difficulty in passing his urine, so that it was not suspected that he had stone. After trying tonics, &c. for some time ineffectually, I passed a steel sound, and then discovered that he had a small calculus in his bladder. The urethra being unusually large for a child of his age, and suffering so little from his complaint, it occurred to me that the operation of lithotripsy might be tried, particularly as he was a very docile and tractable child.

On the 17th January, 1834, I consulted Baron Heurteloupe, who was at that time frequently performing that operation in London, as to its practicability in his case. He examined the boy, and was of opinion that, the stone being small, the operation might be successfully done, and in the most liberal manner offered to perform it gratuitously. As there was no urgency, the child appearing to suffer so little, the Baron recommended the previous frequent introduction of sounds into the urethra, for several weeks prior to his operating, in order to ascertain its capacity, and to familiarize the urethra to the presence of instruments. This was done by the almost daily introduction of elastic-gum and metallic bougies, until a steel sound (No. 12 size) could be introduced with facility. The bladder was also occasionally injected with warm water, and by this previous treatment the fears of the child were overcome.

On the 19th of March, Baron Heurteloupe performed the operation in the presence of several medical gentlemen. The stone was seized with great skill and celerity, and was crushed by a few blows of the hammer. The operation was over in about two or three minutes, and the child did not appear to suffer anything beyond the fear natural upon such an occasion. The same evening he passed with his urine much sand and several minute fragments of the stone. On the following day there was some inflammation and swelling of the meatus urinarius, with slight mucous discharge from the urethra, and several fragments of stone were seen sticking within the urethra about half an inch down the canal; by means of a small forceps these were easily extracted. He had slept well, and made no complaint. He continued to pass small fragments and sand until the 25th of March, when he complained of a want to make water, but could not void any. On introducing a catheter, it could not be passed beyond four or five inches, a fragment of the calculus being evidently impacted in the urethra. Baron Heurteloupe happened to call very soon after this occurred, and after some time, by injecting warm water and a little manipulation with sounds and catheters, succeeded in pushing back the fragment into the bladder, and then the urine flowed freely; but even on this occasion, when more force was used than during the whole of the treatment, not a drop of blood was passed, although it might have been expected, from the urethra being scratched or wounded by the

fragment. The following day (the 26th) a *second operation* was performed, and the Baron laid hold of, and crushed, two or three remaining fragments in the bladder, in as short a time as in the first operation, and with as little pain to the child.

For three or four days afterwards, sand and minute portions of the stone were voided; after which his urine became quite clear, he ceased to wet his bed, and has continued to the present time, upwards of seven years since the operation, quite free from any urinary complaint. On analysing the fragments of the calculus, it appeared to be composed of the triple phosphate, and the amount of the *detritus* or dry fragments collected (exclusive of much sandy matter necessarily lost) weighed forty grains. I have subsequently passed both sounds and catheters into his bladder at various times, to ascertain if any fresh stone had formed, but have never discovered any. He is now a drummer in an infantry regiment.

It is worthy of remark, that the above is the only case of stone which has occurred in this Institution, according to the hospital records, since it was founded in 1803, up to the present time, yet upwards of 7000 children, of both sexes, between the age of five and ten years, have been admitted during that period.

#### 1835.

With the beginning of this year scarlet fever again appeared: there were ten cases: only *three* had much affection and ulceration of the throat.

Of the fatal cases in this year I deem the following interesting from the extent of the visceral disease, which was discovered on the *post-mortem* examination.

*Case 22.*—William Shell, aged 14 years, of a highly scrofulous habit, had been for a long time suffering from the usual symptoms of *marasmus*, and his emaciation proceeded very rapidly. It was evident that there existed considerable organic visceral disease, and all remedies proving ineffectual, he died on the 28th January, 1835, in an extremely emaciated state!

*Autopsy*, 46 hours after death.

*Thorax.*—*Both lungs* were free from any unnatural adhesions, but on being cut into were found full of small hard grey coloured tubercles, of the size of mustard seeds, dispersed in their parenchymatous structure.

*Pericardium and heart* normal.

*Abdomen.*—Here great tubercular disease was seen. The *omentum* was devoid of fat, but was entirely covered with minute tubercles.

The *liver* was of a very large size, partially adherent by threads of false membrane to the inner surface of the lower ribs, and under surface of the diaphragm. It had a dark red, and mottled appearance, and on making incisions into its substance, several tubercles were found, some softened and containing purulent matter.

The *spleen* was enormously enlarged, full of tubercles both externally and imbedded in its substance, many of which were in a state of suppuration and ulceration, which, contrasted with the dark red colour of the spleen, exhibited a very curious red and yellow speckled appearance. Small patches of coagulated lymph were also deposited on its surface. When removed from the body it was found to weigh 12 ounces *avoirdupois*! nearly three times the weight of the healthy spleen of an adult.

The small intestines were healthy; the sigmoid flexure of the colon was much contracted to the extent of several inches.

The *mesenteric glands* were very much enlarged, and several converted into a yellow caseous consistence peculiar to scrofula. The under surface of the diaphragm was nearly covered with patches or depositions of tubercular matter. About four ounces of serous fluid were found effused in the pelvis.

The other death from *tabes mesenterica* was a boy aged five years, born in



Jamaica, and admitted from that place into the Institution only two months prior to his death. On examination the liver was found much indurated, of a light brown or nutmeg colour, and containing tubercles, some in a softened and suppurating state. The *spleen* also contained many small tubercles, but was of its natural size.

In the fatal case of hydrocephalus both the lungs and spleen were found tuberculated, but the tubercles were small and quite in an incipient state. I consider hydrocephalus to be one of the fatal forms of scrofula, for I may here observe, that of seventeen *post-mortem* examinations that I have made of this disease, tubercles of the lungs, or organic disease of some of the abdominal viscera, were found in nine—and in three of the other eight cases the thorax and abdomen were not examined, my attention not being then drawn to the subject.

1836.

There were three cases of small-pox in the months of May and June, two were of the confluent kind and one was of a mild and modified form.

Three cases of chicken-pox occurred at the same period. Whenever small-pox has appeared, there have been generally during its continuance a few cases of chicken-pox.

Although varicella very much resembles mild small-pox on its first appearance, yet I think it has sufficient distinguishing characters, especially as the disease progresses.

I shall quote the opinions of a few eminent physicians regarding the diagnosis of the two diseases.

"The eruption of the chicken-pox comes on with very little fever preceding it, or with a fever of no determined duration. The pimples of the chicken-pox are formed into little vesicles or pustules more quickly than those of small-pox. The matter in these pustules remains fluid, and never acquires the colour or consistence of the pus which appears in the pustules of small-pox. The pustules of the chicken-pox are always, in three or four days from their first appearance, formed into crusts."—Cullen.

"Chicken-pox can in some instances be distinguished from the small-pox only by its quicker progress towards maturation, and the shorter duration of the pustules; a watery vesicle always appearing on the second or third day from the eruption, and the turn at the farthest taking place on the fifth."—Heberden, Med. Trans. of the Col. of Physicians, vol. 1, Art. 17. Dr. Heberden also states—"that in chicken-pox he never saw any person with so many as 300 pustules on the whole body; he also notices the early abrasion of the vesicles; their irregular and oblong form, the shrivelled or wrinkled state of those which remain entire on the third or fourth day, and the radiating furrows of others, which have had their apices closed by a slight incrustation; the general appearance of the small scabs on the fifth day, at which time the small-pox are not at the height of their suppurating—sufficiently distinguish the eruption of chicken-pox from the firm, durable, and slowly maturing pustules of small-pox."

Dr. E. J. Clarke says "chicken-pox is to be distinguished from small-pox by the less degree of fever, by the eruption first appearing on the back, and its drying or desquamating on the fourth or fifth day."

Dr. Willan says—"Small-pox pustules on the first and second day of their eruption are small, hard, globular, red, and painful; the sensation of them to the touch, on passing the finger over them, is similar to that which one might conceive would be excited by the pressure of small round seeds under the cuticle."

"In chicken-pox almost every vesicle has on the first day a hard inflamed margin; but the sensation communicated to the finger in this case, is like that from a round seed flattened by pressure." Dr. Willan also remarks—"that, as the vesicles of the chicken-pox appear in *succession*, during three or four days,

different vesicles will be at once in different states of progress: and if the whole eruption, on the face, breast and limbs, be examined on the fifth or sixth days, every gradation of the progress of the vesicles will appear at the same time. But this circumstance cannot take place in the *slow and regulated progress* of the small pox."

I have frequently had occasion to notice the correctness of this last observation of Dr. Willan.

There was no death from disease this year, only one from an accident. A boy fell from the top of the stairs on a stone pavement below, fracturing extensively all the bones of the left side of his head. The *dura mater* was lacerated and the whole of the left *parietal* bone driven into the brain. Notwithstanding the severe nature of the accident, he survived it 58 hours, but in an insensible state.

## 1837.

This year was ushered in by the appearance of an epidemic catarrh or influenza among the children.

During the month of January and beginning of February sixty cases were admitted into the hospital, the symptoms were nearly the same in all, and much resembled those of the epidemic catarrh in 1833.

The weakly and delicate children suffered most, and one of the cases of phthisis pulmonalis which happened this year was evidently hastened to its fatal termination by this influenza.

On reference to the Tabular Return it will be seen that an unusual number were admitted for cutaneous complaints—namely, 261 in the course of the year. A pruriginous papular eruption prevailed, and after being apparently cured in a few weeks recurred, the relapses being very frequent. Although sulphur was freely employed both externally, and internally, yet in a great number of cases it failed to cure this eruption, and tepid baths, with milk diet, and saline cooling aperients, appeared to be more beneficial.

There were three deaths this year; two from *phthisis* were of the ordinary kind, and exhibited on the examination after death the usual appearances—tubercles and vomicae. The one from *tabes mesenterica* also exhibited the common appearances, tubercular depositions on the small intestines with small corresponding ulcers of the internal mucous coat, great enlargement of the mesenteric glands, and conversion of their texture into a caseous matter.

## 1838.

There was one case of small-pox this year in a boy, aged 13 years, who had a confluent form of the disease.

Three cases of chicken-pox appeared at the same time.

Eleven cases of scarlet fever occurred this year, extending from the month of March until the middle of July. Of this number five had a severe disease, with much ulceration of the throat and tonsils, and six had it in a mild manner: in two of the latter it was followed by anasarca. I have generally found that dropsical affections more frequently succeed the milder attacks of this disease.

There were two deaths this year. One from hydrocephalus—a boy, five years of age, who on admission here on the 20th April, was evidently suffering from affection of the brain, and he died on the 2nd of May, having only lived 12 days after his admission into the Institution.

On the *post mortem* examination the brain was found to be very vascular, and upwards of two ounces of serous fluid were found in the lateral ventricles. The brain was unusually soft.

The viscera of the *thorax* and *abdomen* were perfectly healthy.

The other fatal case from ascites was rather interesting, of which I shall give a brief detail.

*Case 23.*—William Maccauly, aged eight years, an orphan from Trinidad, was admitted into the institution on the 4th of June, at which time, he was suffering under symptoms of anasarca and dropsy. He had a large tumid abdomen, general œdematous swelling of lower extremities, puffiness of the face and eyelids, countenance pallid and waxy, and the skin of the whole body of a peculiar pale yellow colour. Pulse quick and small; tongue flabby, and covered with a yellowish fur; lips pale and bloodless; the person who brought him here from the West Indies said that the boy had suffered much at Trinidad from ague.

Mercurials, diuretics, hydriodate of potash, with tonics, &c. were administered without benefit, and he died on the 30th of July.

*Autopsy*, 36 hours after death.

*Thorax.*—Nearly a pint of serous fluid was effused on each side of the chest. Lungs of a pale colour, structure healthy, and quite free from any unnatural adhesions.

*Pericardium* contained about six ounces of serous fluid, the heart was small, pale, and flaccid.

*Abdomen.*—Upwards of a quart of clear serous fluid was effused into the general cavity. *Stomach* empty, and much distended with air: *liver* very much enlarged, of an orange yellow colour, granulated throughout, and much indurated. Gall-bladder full of green bile. *Spleen* was healthy, and not larger than natural. *Mesenteric glands* normal. No other morbid appearances were observed.

An interesting and curious case of hemiplegia occurred this year, which I think worth relating.

*Case 24.*—On the 14th June, 1838, Frederick Middleton, aged nine years, a pale but stout boy of his age, having congenital deformity of the chest, being what is commonly called chicken-breasted, was brought to the hospital, at nine o'clock in the morning, with the following symptoms, having been quite well at bed-time last night. Extreme dyspnoea, panting for breath, the heart is seen beating violently, great anxiety of countenance, no pulse can be felt at the wrists, face pale and puffy, feet cold, upper part of the body of natural heat, vomiting of bilious fluid. Complains of no pain any where, only of great difficulty of breathing, with palpitation of the heart. Had immediately some hot wine and water, and a cordial mixture, with sesqui-carbonate of ammonia given him, while a warm bath was preparing, and a purgative enema was also injected. At 11 o'clock, after coming out of the bath, he was bled, but little more than an ounce could be obtained. Still no pulse at the wrists.

Imp. empl. canth. regioni cordis.

At seven P. M. the dyspnoea and palpitation of the heart continuing unabated, the following was prescribed:—

R. Hydrarg. chloridi, Pulv. jacobini *aa* gr. ij. Conf. opii q. s. f. pil. 4tis horis sumenda.

R. Magnes. sulph. 3ss. Infusi sennæ, Mist. camph. *aa* 3ss. Liq. ammon. acet. 3i. Sp. ætheris nitric. 3ii. M. capt. ¼ 4tis horis.

*June 15th.*—Has passed a restless night, but respiration is improved, although still much hurried and quick: less anxiety and pallor of countenance: bowels have acted freely, loose bilious motions. Pulse can now be felt at the wrists, but is very small, quick, and indistinct. The saline mixture was continued with the omission of the magn. sulph. and M. xx. tr. scillæ was added: and the calomel pills were continued, substituting gr. ij. pulv. ipecac. c. for the James's powder.

*June 16th.*—Passed a better night; his respiration is easier, but still hurried, and the action of the heart continues inordinate. Pulse very small, quick, and thready. Face now rather flushed, skin hot and dry; carotids pulsate strongly. Tongue covered with a brownish fur.

Enema purg. c. Ol. ricini et magnes sulph. aa 3ss. et persist. in usu mist. et pil. calomel. ter die.

Seven P. M.—Respiration much easier. Pulse at the wrist more distinct, but continues very quick.

June 17th.—Has had a good night, and appears better, respiration less hurried, action of the heart less violent and irregular, pulse 120, small. His diet is merely tea and bread and milk; slight cough.

At nine o'clock this evening his breathing became suddenly more embarrassed, his face flushed, and the action of the heart more violent; tongue clean. Six leeches to be applied over the cardiac region.

R. Hydrarg. chloridi gr. j. Pulv. Jacobi veri gr. iij. M. s. sd. haust. c. magn. sulph. 3ss. cras mane sumendas.

June 18th.—Has had a tolerable night, but his breathing is still hurried and laborious; bowels freely open; pulse 120 to 130, and very small.

Mist. salin. 3j. cum tr. digitalis Mv. 4tis horis.

At 7 P. M. his breathing became much worse, and now the difficulty of respiration appears to occur in paroxysms, as, for some hours during the day, he breathed with tolerable facility. Has also a great degree of tenesmus this evening.

To have a starch enema, with Mxij. liq. opii sed. Batt., Hirudines iv. regioni cordis. Empl. cantharid. inter scapulas; and the following draught:

R. Liq. ammon. acet. 3ij. Sp. ætheris sulph. c. Tr. hyosciam. aa Mxx. Mist. camphoræ 3vj. M. f. haust.

June 19th.—Was tranquil, and slept a great deal during the night. Respiration much better, and performed with less difficulty, but is still rather quick; tenesmus abated. Pulse 120, small and irregular. Makes much urine.

7 P. M. appears easier; respiration more quiet.

June 20th.—Passed a tranquil night; respiration easy, and less quick; cough, with slight expectoration; pulse 110, irregular; tongue clean; abdomen rather distended.

Cont. Mist. salin. cum Tr. digitalis, et sumat haust. aper. cras mane.

21st.—A good night, and is much better; breathing quite free and easy; pulse 110; skin cool; has voided a very large quantity of urine during the night; bowels open.

Mist. salin. cum Tr. digitalis, ter die.

Makes no complaint.

22nd.—Had a good night, but about 8 o'clock this morning he became suddenly pale, faint and collapsed, with a cold clammy skin, weak but irregular pulse. Some hot wine and water was immediately given him, and a cordial mixture with carbonate of ammonia prescribed. He rallied in a few hours, and then a purgative enema was administered. When visited at 7 P. M. he was found to be completely hemiplegic, the right side of his body being paralysed; and he had also lost altogether the power of speech, but was perfectly sensible, putting out his tongue when required to do so, and by motions of his head, replied to inquiries as to whether he had any pain in his head or elsewhere. He signified that he was in no pain. *His respiration also was quite free and easy.*

23rd.—Has had a good night; passes his urine involuntarily; bowels rather torpid; pupils of eyes slightly dilated, pulse 100, soft and small; complete paralysis of right side.

Mist. purg. ad sedes.

7 P. M. His bowels have been freely opened since morning.

R. Hydr. c. cretâ gr. iv. 4tis horis. Applic. empl. cantharid. nuchæ.

26th.—No material change; his gums are now tender; pulse 86; the incontinence of urine has ceased, and he voids it naturally and in large quantity. The blister on his neck to be kept open.

Rep. hydr. c. cretâ bis in die.

July 1st.—He continues in the same state. Pulse 84; gums are kept tender;

appetite good ; pupils are now of natural appearance and contract and dilate freely on the approach of light. The paralytic arm and leg are much colder than on the other side. Blistered surface of neck discharges freely.

Baln. tepid. hac. vespere.

15th.—He appears better, for he can now bend and extend the paralytic leg, but has no power whatever over the arm. He perfectly comprehends every thing that is said to him, and by motions of his head signifies his assent or dissent to questions asked him, for he cannot speak a single word ; has no pain in his head, nor has ever complained of it : pulse 80, regular and of good strength ; gums still tender ; he is now allowed broth diet.

Capt. hydr. c. cretâ gr. iv. omni nocte, and a purgative occasionally.

R. Infus. cascariillæ 3iv. Ammon. sesquicarb. gr. xij. M. capt. ½ bis quotidie.

August 1st.—Very little change since last report, except that his general health improves, and he now takes no medicine except what is necessary to regulate the state of the bowels. His appetite is very good. He can move the paralytic leg, but cannot rest upon it or walk ; the right arm is quite powerless and he is still unable to speak a single word.

14th.—He continues slowly to improve ; can now walk about the ward with the help of a stick, dragging the paralytic leg, and can for the first time articulate distinctly the words yes, no, and nurse, but has no use whatever of the paralytic arm. He is allowed the full diet of the Institution.

Sept. 14th.—He is gaining flesh, and can now walk tolerably well unassisted, but his arm is quite powerless, and he is unable to speak any other words than the monosyllables above-mentioned.

From this period, and during the whole of the Winter, there were such slight variations in his general health and paralytic state as not to require any particular notice. His speech being still limited to yes and no until the 14th April, 1839, when he was attacked with measles, at that time prevalent in the institution ; he had the disease rather severely, which rendered him very weak and unable to walk, although he could walk and even run tolerably well before the attack of measles, with only slight dragging of the paralysed leg.

On the 9th May he was sent with some other scrofulous children to Herne Bay for the benefit of the sea-air and bathing. While there he had so severe an attack of fever that the surgeon despaired of his recovery.

On the 31st Oct. he returned here much improved in general health and strength, quite fat, having a florid healthy countenance. He can now walk very well, and even run without any assistance, with very slight dragging of his right leg. The paralytic state of his arm is but little improved ; he can lift it above his head, but has not the least use of the fore-arm, and his fingers are constantly bent towards the palm of the hand, unless when counteracted and kept straight by means of a splint and bandage. The temperature of the paralytic arm and leg continues lower than the other side, although enveloped in flannel. There is very little wasting of the palsied limbs. The pulse is very small, and scarcely to be felt at the wrist of the affected arm, while it is full and of good strength in the other. His speech is not at all improved, for he still can only articulate the monosyllables yes and no. His countenance is intelligent, and with the exception of the paralysis, he appears to enjoy perfect health ; his bowels are always torpid, requiring the frequent use of aloetic pills or some other purgative.

It being considered that the establishing some drain or counter-irritation near the head might be worthy of trial, on the 19th Nov. a seton was passed in the nape of the neck.

On the 6th Dec. he had an attack of *cynanche parotidea*, with much fever ; in about ten days the fever and swelling of the parotid glands disappeared.

On the 13th Jan., 1840, no benefit having been derived from the seton in his neck, it was withdrawn, and in short there has been no alteration in his paralytic state since his return from Herne Bay on the 31st of Oct. last year.

On the 5th May he was again sent to Herne Bay, from which place he returned in Oct. in the same paralytic state, but otherwise in robust health. Being deemed incurable he was dismissed into the Institution, and taken home by his mother,

This boy was admitted into the Asylum in April, 1833, and had been generally healthy, being very rarely in the hospital until the sudden attack of affection of the heart on the morning of the 15th June, 1838. I consider this attack to have been probably caused by sudden serous effusion into the pericardium, particularly as it was so much relieved by calomel and diuretics, and also by the large quantity of pale-coloured urine which he passed.

The attack of hemiplegia on the 22nd of June, so quickly following the subsidence of the dyspnoea and cardiac symptoms, and without any premonitory affection of the head, I am unable to account for, but consider it a very remarkable metastasis of disease. It is also worthy of remark that, since the attack of hemiplegia, he has had no recurrence of palpitation of the heart or any difficulty of respiration.

I have seen this boy several times since he has left the Institution, and though apparently in every good health, he continues unable to speak, and in the same deplorable state of helplessness.

## 1839.

During the months of March and April, measles prevailed extensively among the children, 35 had this disease, of which number ten had it severely, and 25 had the complaint in a mild form.

In June scarlet fever appeared, but there were altogether only seven cases, from June to September, when it disappeared; of this number three had *scarlatina anginosa*, with much affection of the throat, and four *scarlatina mitis*, with very little affection of the throat. There were five fatal cases this year. The two following may be considered worthy of notice, one from marasmus, the other from scrofulous disease of both kidneys. They were brothers, and both were admitted into the Institution from Gibraltar, the one aged eight years, the other twelve years; and I think them well-marked instances of the hereditary nature of scrofula and tubercular disease.

*Case 25.*—Alexander Grant, aged eight years, a puny and delicate child, born in Scotland, but came from Gibraltar to this Institution in July, 1837; was admitted into the hospital in February, 1839, with advanced symptoms of mesenteric disease. On the 19th of April he had the measles, at this time prevalent in the Institution, but in a mild form, and he suffered chiefly from the disease of his digestive organs, although it might, *by increasing his debility, have accelerated his death*, which took place on the 23rd April.

*Autopsy*, 54 hours after death.

*Thorax.*—The left lung was firmly adherent to the *pleura costalis* and adjacent parts, requiring much force to separate it. On cutting into it numerous tubercles were seen, and it was much indurated and hepatized. The right lung was only partially adherent to the *pleura costalis*, this also contained tubercles, several of which were in the first stage of softening or suppuration; it was not indurated like the other lung, but crepitated under pressure like healthy lung. The pericardium contained about two ounces of serum—heart natural.

*Abdomen.*—The liver adhered firmly to the peritoneum, diaphragm and ribs, it was large, of a brown or nutmeg colour, and contained a few tubercles in a softened state. Both the large and small intestines were studded with grey coloured tubercles, and were partially adherent to the peritoneum, and to each other, by threads of coagulated lymph. The mesenteric glands were universally diseased, greatly enlarged, and several converted into the peculiar scrofulous, caseous substance. The spleen had a few minute tubercles on its external surface. The omentum and peritoneum were plentifully studded with small grey

tubercles of the size of mustard seeds, and some as large as small peas. The kidneys and urinary organs were in a perfectly healthy state.

*Case. 26.*—Joseph Grant, aged twelve years, born at Gibraltar, was admitted into the Institution in July, 1836. He was of a scrofulous habit, with a dry furfuraceous state of the skin, and subject to occasional swelling of the sub-maxillary and cervical glands; but rarely in hospital, except for trifling complaints of a few days' duration, until the 5th February, 1839, when he was admitted for severe ulcerated chilblains. In the beginning of March he was attacked with fever, but did not complain of much local pain; nor was attention drawn to the state of his urinary organs until the 28th March, when he complained of pain and smarting in making water, with a frequent desire to make it. On examination, there was edematous swelling of the prepuce, with slight enlargement of the body of the penis; and a small circumscribed swelling, of the size of a small hazel-nut, in the course of the urethra, just in front of the scrotum, very hard to the touch, and painful under pressure. Two or three of the inguinal glands were also enlarged, apparently from sympathetic irritation. He could assign no cause for this swelling, and said he had only perceived it a day or two. Pulse 120—a dry, unspirable, and scurfy state of the skin; thirst; frequent micturition, and the general symptoms of fever were now present. His urine was observed to be turbid and milky, soon forming a deposit, and on being tested, had little or no effect on either litmus or tumeric paper. On the 30th of March the swelling had increased to the size of a small walnut, and fluctuation being now perceptible, it was punctured, and about a teaspoonful of purulent matter evacuated.

Mr. Stanley, surgeon of St. Bartholomew's Hospital, saw the boy with me at this time; and we sounded the bladder, suspecting calculus, but nothing could be perceived, except that it was in an extremely irritable state, and the operation appeared to cause much pain. In a few days under treatment the febrile symptoms were mitigated, but his pulse continued very quick, varying from 100 to 120; the irritable state of the bladder remained unmitigated, and the urine continued to exhibit the same turbid and milky appearance. He was frequently asked if he had any pain in his back or loins: he always said he had not. The region of the kidneys was often examined and strong pressure used, but he only complained of the continual desire to make water with pain in voiding it—passing only from half an ounce to an ounce at a time.

*April 6th*, the urine now passes both through the fistulous opening in front of the scrotum and orifice of the urethra: the meatus is also slightly ulcerated. The urine continues turbid and milky, and deposits a copious sediment very soon after it is voided. I took some of the urine to Dr. Prout, who was so kind as to analyse it. He said that it was serous and purulent, and that it was strumous pus, that it most probably proceeded from the kidneys, and that he had never seen such matter in calculous cases. He also prognosticated a fatal termination.

From this time there was little variation in the symptoms, only he gradually emaciated, and the character of the urine continued unchanged, but the purulent deposit varied as to quantity.

*May 6th.*—The urine now began to dribble from him when in the erect posture, and an accumulation of it appeared to take place in the perineum behind the scrotum, forming a small pouch in the membranous part of the urethra, and on pressing that part it oozed out from the fistulous opening and orifice of the urethra.

*May 16th.*—He now began to have evening febrile exacerbations and regular hectic fever commenced. He still says he has no pain any where except in the perineum and urethra, and chiefly suffers from the irritable state of the bladder, requiring him to make water almost every hour, and consequently disturbing his

rest at night. There is also now more ulceration of the orifice of the urethra, and excoriation of the scrotum is threatened by the constant dribbling of the urine. 27th. The urine this morning contained an increased quantity of purulent deposit, mixed with ropy mucus, and his emaciation more sensibly and rapidly increases. The hectic fever continues, and his appetite, which has always been capricious, now begins to fail. The pouch or deposit of urine in the perineum does not enlarge, but on pressure is always found to contain a small quantity of urine.

June 4th.—To-day, for the first time, he complained of pain on the left side of his chest and over the region of the kidneys, increased by pressure. He has also had, for the last few days, a short dry cough; his countenance, at all times expressive of pain and anxiety, has now become more so, and he is evidently sinking under his disease. His pulse is very quick and wiry, and his appetite has entirely failed. 10th. He now speaks with difficulty, but is quite sensible. The stomach has become irritable and rejects both food and medicine. The irritability of the bladder is extreme, he is constantly passing small quantities of urine, which has uniformly preserved the same character, and on being kept for several days did not undergo decomposition or change.

The scrotum having been protected by oiled silk, has not excoriated, but there is deep ulceration round the *meatus urinarius*. His suffering is very great, and he is evidently dying. 11th. He died at 5 o'clock this afternoon, being perfectly sensible to the last. With regard to the treatment employed, it is not necessary to say anything as it could be only palliative. The peculiar, dry, furfuraceous state of the skin was remarkable, and a perspirable state of it could not be produced by any remedies.

*Autopsy*, 26 hours after death.

*Thorax*.—The *lungs* on both sides adhered to the parietes of the chest, but the adhesions were evidently of long standing. At the posterior part of both the right and left lung a large vomica was seen of the size of a filbert, containing purulent matter; a few tubercles were also found dispersed throughout their structure, the greater part of which however was healthy and crepitating. The *pericardium* and *heart* were natural.

*Abdomen*.—On opening this cavity the *omentum* and the whole of the peritoneal surface of the intestines and viscera were studded with small yellowish tubercles; also the folds of the mesentery, but the mesenteric glands were of natural size and appearance. The *right kidney* was next examined; on pressing it gently previous to incising it, pus flowed freely out through the divided ureter to the amount of two or three drachms. On cutting it open several abscesses were seen, and the pelvis was ulcerated, abraded, and entirely denuded of its mucous surface. On slitting open the canal of the ureter, the mucous lining was only partially ulcerated, there being small spots of ulceration on various parts of its internal surface. The *left kidney* also contained several abscesses, and, together with the ureter, exhibited the same appearance as the right. The *bladder*, which was very much contracted, was then removed, together with the penis and urethra. On slitting open the urethra its mucous surface was found abraded, and there were two ulcerated apertures in it from which urine and pus had evidently escaped during life, forming the small fistulous abscess which appeared in front of the scrotum. The *meatus urinarius* was also deeply ulcerated. The incision was then continued to the fundus of the bladder, which was quite empty, contracted, and rugous, its external muscular coat much thickened, and the internal completely denuded of its mucous surface. The *liver* and other viscera were normal.

It is curious to remark how the ulcerative process was continued throughout the whole of the urinary organs, from the kidneys to the orifice of the urethra.



1840.

There were ten cases of whooping-cough in the Spring of this year, five were very severe, one of which proved fatal.

A case of small-pox occurred on the 14th November in a boy aged 10 years, who was said to have been vaccinated, but as the mark was very indistinct and doubtful he was re-vaccinated here, but without success. He had a plentiful crop of pustules, but little fever, and no permanent marks were left. As usual, five cases of chicken-pox appeared about the same time.

The two cases of scarlet fever were slight, with very little affection of the throat.

Of the deaths this year, the case of whooping-cough, which proved fatal from a determination to the brain, is the only one worth relating.

*Case 27.*—William Crumpton, aged six years, was admitted into the hospital on the 7th March, 1840, for catarrhal fever, which soon merged into whooping-cough, at this time prevalent. He had violent paroxysms of coughing with great dyspnoea and evident affection of the head, being delirious the last few days of his life. He had leeches to the sternum and temples, blisters, saline and antimonial medicines, &c., but he progressively got worse, and died on the 21st March.

*Autopsy*, 46 hours after death.

*Head.*—Great difficulty was experienced in detaching the *calvarium*, it adhered so firmly to the *dura mater*, particularly at the posterior part. On slicing the brain down to the ventricles numerous bloody points appeared, and *all the vessels and sinuses of the brain were gorged with blood*. The lateral ventricles contained about one drachm of limpid fluid. The *plexus choroides* and the vessels which traverse the interior of these ventricles were much more conspicuous than usual. The substance of the brain was unusually firm. Nothing morbid besides the increased vascularity of the brain was observed.

*Thorax.*—On raising the sternum the *lungs* did not collapse, and were seen much distended with air and emphysematous, but there were no signs of inflammation, and no preternatural adhesions. They were of the natural bluish-grey colour: on cutting into their substance, which was very light and spongy, a great number of small granules or incipient tubercles were discovered.

The *trachea* and bronchial tubes were examined, but no unusual vascularity was observed; they only contained a small quantity of frothy mucous.

The *pericardium* and *heart* were natural. The abdomen was also examined, but no morbid appearances were observed.

1841.

No death occurred among the boys this year, but two girls died, one aged seven years, from a sudden hæmorrhage from the lungs, and the other, aged 14 years, of phthisis pulmonalis. I shall relate the case of the former as an example of the occasional termination of tubercular disease of the lungs.

*Case 28.*—Emily Evans, æt. seven years, was born on board-ship, on her parents' voyage to the West Indies, in January, 1834. Both of them subsequently dying there, she was sent home from Demerara to the Royal Military Asylum, Southampton, in August, 1838; and, on the reduction of that establishment in Nov. 1840, was transferred here. In March, 1841, she had a severe attack of jaundice, of which she was cured in a few weeks, but still evident symptoms of organic visceral disease remained—these were an irregular and torpid state of the bowels, a hard tumid abdomen, sallow countenance, constant quick pulse, capricious appetite, and gradual emaciation. She had very little cough, and without any expectoration, and did not complain of pain, except occasionally in the abdomen.

She was not confined to bed, and was able to take moderate exercise in the

play-ground. On the evening of the 12th of August she went to bed apparently in the same state as she had been for some weeks previously. At six o'clock the following morning the nurse found her dead in bed surrounded with a large quantity of blood, which had evidently come from her mouth by vomiting.

*Autopsy*, 30 hours after death.

*Thorax*.—Slight adhesion of the inferior and posterior part of the left lung to the ribs; the right lung had no preternatural additions. Both lungs when incised exhibited numerous hard, grey, miliary tubercles, dispersed throughout their parenchymatous structure, but no vomiceæ. In the middle lobe of the *right lung* a large jagged excavation was seen, containing a considerable quantity of grumous blood, but no purulent matter. It was quite evident that from this portion of lung the fatal hæmorrhage had originated.

The *pericardium* and *heart* were normal.

*Abdomen*.—The *liver* was of a pale yellow colour, and much harder than natural. Numerous small tubercles of a yellow colour were observed on its external peritoneal surface, particularly towards its thin edge, and similar tubercles were also found to pervade its substance.

The *spleen* was studded with tubercles both externally and in its internal structure.

The *small intestines* had several tubercular deposits on the peritoneal surface, and on slitting them open, corresponding ulcerations of the internal mucous coat were seen. The *mesenteric glands* were much enlarged and indurated, and the folds of the mesentery were studded with small, round, yellowish tubercles.

In the girl who died of phthisis pulmonalis, on a *post-mortem* examination, *both lungs* were found to contain tubercles and vomiceæ, and in the upper and posterior part of the left lung there was an extensive abscess.

#### CONCLUDING REMARKS.

Scarlet fever is frequently a very fatal disease, particularly to children, yet it will be seen, that within the period comprised in this statistical account, out of 139 treated, only one case proved fatal. I consider this fortunate result to be chiefly owing to the prompt medical assistance afforded, and the treatment not being interfered with by the fears and prejudices of parents and relations. How frequently is the call for medical aid deferred until the disease has gained an ascendancy which the most skilful employment of remedies cannot afterwards overcome.

In *scarlatina anginosa* I am convinced that early medical treatment is of the highest importance. I think it right to mention that I have found cold affusion or sponging with vinegar and water, according to circumstances and the season of the year, very beneficial. I do not find the children much frightened at the cold affusion as employed here, which is in the following manner.

The child, when covered with the scarlet eruption and the skin very hot and dry, is made to sit on a small stool placed in the middle of a large washing-tub, when about a gallon of cold water is quickly poured over him, he is then wiped dry and replaced in bed. This is in most cases followed by sleep and an abatement of the heat of skin and fever. I have never seen any harm result from this treatment, but it should be employed in the early stage of the disease.

It is useful to have the vapour of boiling vinegar dispersed through the ward or apartment, and for this purpose we use an earthenware apparatus of a conical shape, with a lamp, &c., which is easily procured in London.

I have before observed that the œdematous and dropsical affections which occasionally follow scarlet fever during the state of convalescence, more frequently occur after the milder attacks of this disease.

In an account of the scarlet fever which occurred among the children in

George Heriot's Hospital, Edinburgh, in the Winter of 1832-33, given by Mr. Wood, surgeon of that institution, and published in the Edinburgh Medical and Surgical Journal of January, 1835—he states “that out of 44 patients between the ages of 8 and 14 years, *nine* were afterwards affected with dropsical swellings.” A much greater proportion than has ever occurred here; but he corroborates my observation by stating “that the patients who became affected with dropsical symptoms were not those who had been most severely ill of the primary fever.”

Mr. Wood also says that of the 44 boys who were affected with scarlet fever, “*five* were supposed to have had it previously—but the information procured on this subject is vague and unsatisfactory.”

I have never seen an instance in this institution of scarlet fever occurring twice in the same individual.

As scarlet fever is highly contagious, it is here an invariable rule not to permit the convalescence to mix with the other children for a month, and not until *all* desquamation of the skin has entirely disappeared. Tepid baths are used occasionally during convalescence, in order to restore the healthy functions of the skin. Great care is also taken that the return to the usual full or animal diet should be gradual.

*Measles*.—The season of the year at which this disease appears makes a considerable difference in its severity, being most severe in Spring and Winter. Since the year 1825 there have been 240 cases of this disease, of which number *five* proved fatal. On the *post-mortem* examination *two* exhibited tracheal inflammation only, and *three* inflammation of the lungs. Three died in April, 1825, and two in the months of November and December, 1826.

*Whooping-Cough* is a disease not generally under much control, it will last a certain time under any treatment, but it can be much alleviated and rendered safe by medicine.

The treatment I employ consists of emetics, aperients, tepid baths, and a regulated diet, according as there may be more or less febrile excitement or tendency to inflammation of the lungs. Ipecacuanha, either the wine or powder, in very small doses, I have found very useful. I think also stimulant and antispasmodic embrocations serviceable.

This complaint does not appear to be so frequent at this institution as the other diseases of childhood. There have been only 69 cases within the period comprised in the preceding account, *five* of which proved fatal, two having died from the debilitating effects produced by the disease, two from inflammation of the lungs, and one from inflammation of the brain.

*Small-pox*.—It will be seen by the tabular return annexed, that there have been only 23 cases of this disease in 17 years, all of which, with the exception of four, have been subsequent to vaccination. Seven of them were severe and of the confluent kind, but in no instance was danger of a fatal result apprehended, there being no secondary fever on the maturation of the pustules. It is also worthy of remark that, notwithstanding the highly contagious nature of this complaint, it has never spread to any great extent among the children, although about three-fourths have only vaccination for their protection.

*Chicken-Pox*.—Of this complaint there have been 60 cases; it generally appeared at the same period with small-pox, but sometimes it prevailed alone.

*Epidemic Catarrh*.—The children suffered from this complaint in the years 1826-33—and 37, like the rest of the community, when it was prevalent in

London.\* I think it however worthy of notice, that in the year 1832, when the Asiatic Cholera prevailed so much in London and the suburbs, no instance of it occurred among the children or other inmates of this institution.

The only precaution taken was to prevent the children from going out of the building to visit their friends, as is customary at other times, nor were their friends permitted to come here while this disease was prevailing.

*Common Fevers.*—By this I intend to denote the numerous ephemeral and slight febrile affections to which children are subject, arising from cold, or from a loaded state of the alimentary canal, biliary derangements, &c. exclusive of those of a specific nature.

*Cutaneous Diseases.*—Those of most common occurrence here are prurigo, scabies, psoriasis, herpetic eruptions, and especially the various forms of porrigo capitis, not only the most frequent, but the most troublesome and intractable to which children are subject. Formerly, when 1250 children were in this Asylum, upwards of 100 have been affected with it at one time.

I have in vain sought for some specific or general application, but have found that the ointments and lotions which proved beneficial in some cases, have been completely unsuccessful in others. Without reference to the different names given by authors on cutaneous diseases to the various forms of porrigo, I am guided in the external treatment by the different stages of the disease, and the appearances which the scalp presents, which for practical purposes I thus classify:—1st, the inflammatory and pustular—2d, the humid and discharging—3d, the scabbing, dry, or furfuraceous stage.

In the first, I employ cataplasms of bread, lotions of thin gruel, decoction of poppies, with a small quantity of the liq. plumb. diacet., solutions of borax, &c.—all the hair is directed to be cut off, and the head to be shaved when it is in a state to bear it. In the second, where there is an ichorous discharge and an excoriated state of the scalp, the following lotion has been found useful:—*R.* Zinci oxyd. alb. ʒij. Mist. acaciæ, Aquæ, aa ʒj. M. The powder is insoluble, but when used the mixture is to be well shaken and applied to the excoriated places by means of a small piece of lint or camel's-hair pencil. The powder is deposited, checks the discharge, and after a few applications, scabbing or a dry state of the scalp is produced.

In the third stage, the use of bread poultices and emollient applications are again necessary to remove the encrustations. The *oleum sulphuretum* applied by a pencil brush sometimes also does this very well. Now various ointments are used, taking care that they are not too stimulating—as the ung. hydr. nitr., u. hyd. ammonio-chloridi, u. sulphuris, u. picis, &c., much diluted with ung. cetacei, suiting their strength according to the appearance the head exhibits during their use. And the above ointments are also often advantageously combined. Sometimes fluid applications seem to agree better than unguents, as lotions of diluted spirits of wine and acetic acid, a weak solution of argenti nitras or cupri sulphas, and lotions made with the sulphuret of potash, &c.

There have been a few cases of the peculiar species denominated *porrigo decalvans*, and they have generally been cured by the assiduous application of stimulating liniments. This complaint occurs among the healthy as well as the puny and delicate children, the internal or constitutional treatment therefore must vary accordingly. In the former, a regulated diet and the occasional use of purgatives is all that is required; but in the latter, purgatives, alteratives, and tonics, are necessary, for in a great many cases the digestive organs are much in fault.

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\* For the symptoms and character of which, the reader is referred to the annual remarks and observations of those years.

The alvine evacuations being morbid and unhealthy, a cachectic or scrofulous habit prevailing, this must of course be corrected before we can expect to derive benefit from any external treatment.

*Diet* is also a most important point, quite as much as the medical treatment; for if full animal diet be given to gross and plethoric children, the complaint will baffle all our remedial measures, and not be easily subdued: and vice versa, in pale, scrofulous, and puny children, a meagre diet is equally bad. I think it right to state, that in this respect my experience and observations very much correspond with the treatment recommended by Mr. Macilwain in his valuable little work on this disease, entitled, "Clinical Observations on the Constitutional Origin of the various Forms of Porrigo, &c. &c. By George Macilwain. Lond. 1833." But I think he undervalues the use of topical applications, for though a regulated diet and attention to the state of the bowels and biliary secretion is absolutely necessary, yet external remedies most assuredly will expedite the cure. I have found that this complaint prevails most in Spring and Summer, and requires the utmost care and attention to prevent its spreading; it also more particularly affects the younger children, or those under nine years of age—very few, comparatively, above that age, being afflicted with it. Relapses are frequent, especially where there has been a want of cleanliness. That it occurs in some children spontaneously I am well convinced, especially in delicate and scrofulous children. I have also seen it appear during convalescence in those who have been debilitated by an attack of some febrile complaint, while in hospital, and removed from all source of contagion.

It is often impossible to predict the length of time that may be required to effect a cure of this complaint, many getting well in a few weeks, others not for several months or even years, including relapses, which are very frequent. A return to an unsuitable diet and inattention to cleanliness are the common causes of a return of the disorder. Some children are evidently more prone to this disease than others, and I have remarked that those having red hair are generally difficult to cure. At present (Dec. 1841,) there are eleven cases of porrigo under treatment, five only of which are inveterate and of long standing.

I have already mentioned that diet is of much importance in the cure of this complaint, but it is very difficult in large establishments of children, of different ages, to form a diet suitable to each, both as to quantity and quality, with a due proportion of animal and vegetable food. The Diet Table of this Institution is as follows:—

DIET TABLE, ROYAL MILITARY ASYLUM, FOR ONE CHILD.

DAYS.	BREAKFAST.	DINNER.	SUPPER.
SUNDAY.	Milk Pottage. Milk, 1-6th of a quart. Oatmeal, 1-16th of a pound. Bread, 1-20th of a quart loaf.	Beef, roasted, 8 ounces. Potatoes, 12 ounces. Bread, 1-20th of a quart loaf. Beer, $\frac{1}{2}$ a pint.	Bread, 1-20th of a quart loaf. Cheese, 1 $\frac{1}{2}$ oz. Beer, $\frac{1}{2}$ a pint.
MONDAY.	Ditto.	Pudding, Suet, 1 $\frac{1}{2}$ ounces. Flour, 6 ounces. Potatoes, 8 ounces. Beer, $\frac{1}{2}$ a pint.	Bread, 1-20th of a quart loaf. Milk, $\frac{1}{2}$ a pint.
TUESDAY.	Ditto.	Beef, 8 ounces. } stewed. Potatoes, 12 ozs. } Bread, 1-20th of a quart loaf. Beer, $\frac{1}{2}$ a pint.	Bread, 1-20th of a quart loaf. Cheese, 1 $\frac{1}{2}$ oz. Beer, $\frac{1}{2}$ a pint.

WEDNESDAY.	Milk Pottage. Milk, 1-6th of a quart. Oatmeal, 1-16th of a pound. Bread, 1-20th of a quart. loaf.	Soup, Pease, 1 gill. Potatoes, 12 ounces. Bread, 1-20th of a quart. loaf. Beer, $\frac{1}{2}$ a pint.	Bread, 1-20th of a quart. loaf. Milk, $\frac{1}{2}$ a pint.
THURSDAY.	Ditto.	Beef, 8 ounces } stewed. Potatoes, 12 ozs. } Bread, 1-20th of a quart. loaf. Beer, $\frac{1}{2}$ a pint.	Bread, 1-20th of a quart. loaf. Cheese, 1 $\frac{1}{2}$ oz. Beer, $\frac{1}{2}$ a pint.
FRIDAY.	Ditto.	Pudding, Suet, 1 $\frac{1}{2}$ ounces. Flour, 6 ounces. Potatoes, 8 ounces. Beer, $\frac{1}{2}$ a pint.	Bread, 1-20th of a quart. loaf. Milk, $\frac{1}{2}$ a pint.
SATURDAY.	Ditto.	Mutton, 8 ounces, } stewed. Potatoes, 12 oz. } Bread, 1-20th of a quart. loaf. Beer, $\frac{1}{2}$ a pint.	Bread, 1-20th of a quart. loaf. Cheese, 1 $\frac{1}{2}$ oz. Beer, $\frac{1}{2}$ a pint.

N.B. The Meat is estimated as taken from the Butcher, including Bone.  
A proportion of the very small Children on six ounces of Meat.

*Perniones*, or chilblains, are very common in the Winter months. They generally first appear about the end of October or beginning of November, and continue to prevail till the end of March. The ulcers formed by the chilblains, are often long in healing, apparently from want of power or tone in the system and a weak circulation, and the scrofulous children suffer most from them.

*Hernia* occasionally appears in some of the children. From the year 1835 to 1841 inclusive, 1,340 children have been admitted into this Institution, (exclusive of those previously admitted and remaining), and during that period only twenty-two have had this complaint.

Of this number *twenty* were inguinal, and *two* came down with the testes into the scrotum. *Fifteen* occurred on the right side, *two* on the left, and *two* were on both sides.

Of the total number, *eleven* were cured during their stay in the Institution, *two* died of other complaints, *eight* have been discharged as apprentices to trades, or to their friends, and *one* still remains in the Asylum.

Regarding the age at which the hernia appeared, *seven* occurred between the age of five and nine years, and *fifteen* from nine to fourteen years.

I have rarely been able to trace the immediate cause of rupture in consequence of the children not being aware of it on its first appearance, therefore it is only accidentally discovered, or when they suffer pain from the swelling.

The *Gymnastic Exercises* in use here have been supposed to have a tendency to produce ruptures; without denying this, I cannot say that I have had any case directly traceable to such a cause.

Boys under nine years of age are not permitted to use these exercises. I have tried various kinds of trusses, but have found those made by Mr. Egg, of Piccadilly, answer best.

Among the various diseases which occur here, scrofulous affections form a considerable proportion—such as chronic enlargement, inflammation and supuration of the cervical and other lymphatic glands; pustular ophthalmia corneitis, ulcers of the cornea, iritis, &c. Scrofulous affections of the bones, and disease of the elbow, hip and knee joints, are common. There has been only one instance of caries of the shoulder-joint, and I believe scrofulous affections of this joint are rare. There have been also several cases of spinal disease.

*Mesenteric Disease* is very frequent. Through the humane consideration of the Commissioners of this Institution, for the health of the children, a certain number afflicted with the scrofulous complaints are annually sent to Herne Bay during the Summer months, for the benefit of sea-air and bathing.

Much good results from this—many having returned in a greatly improved state of health, and cured of various scrofulous ulcerations. Others with enlarged lymphatic glands have, in most instances, had them considerably diminished or totally resolved. Some affected with incipient mesenteric disease have received the greatest benefit from their temporary residence at the sea-side, and who most probably, without this change of air, would have fallen victims to the disease. A few having scrofulous ophthalmia have sometimes been sent, but in these cases no good has ever been derived.

In the preceding statement the amount of disease and mortality may probably appear to be much greater than what occurs in other establishments of children of equal number in this country. I think, however, this may readily be explained, when it is considered that they are admitted at the early age of five years, and consequently a great number of them have to pass through all those diseases which are natural to childhood, and, in addition, that many of them have been born in various climates, East and West Indies, &c. and badly nursed from their earliest infancy.

Sir J. Clark, in his valuable work on the influence of Climate, makes the following remark—"The great prevalence of pulmonary diseases among the natives of tropical climates who come to this and other cold countries, is doubtless chiefly owing to the influence of a cold and humid atmosphere upon their system. It is in such persons and in *young children* that tuberculous diseases are more speedily induced, and where inflammation appears more intimately connected with the production of tubercles.

The rapid progress of the disease in both classes of persons is to be explained principally, I believe, by the circumstances of their habit of body being that which is most disposed to tuberculous affections,—the most nearly allied to tuberculous cachexy."—I have frequently had occasion to witness the accuracy of this observation in the children admitted here from warm climates.

In conclusion, I wish particularly to observe that, of the 92 deaths specified in the preceding statistical account—53 have died at and under nine years of age, and 39 from ten to fourteen years; and of the whole number, fifty-eight, or nearly two-thirds, have exhibited, on the *post-mortem* examination, a greater or less extent of tubercular disease, whatever might be the proximate cause of death.

It cannot fail to be noticed that pulmonary consumption, and marasmus, are the two most fatal diseases which occur here, and next in fatality—hydrocephalus, a disease which undoubtedly frequently originates from a hereditary and scrofulous taint.

I think, therefore, it is fully shown, by the foregoing statement, that scrofula and tuberculous cachexy prevail, and are apparently hereditary, in a very great proportion of the children of soldiers. I could have given many more cases from my notes to prove this had I not wished to avoid prolixity and a repetition of cases nearly similar.



- A** The manner in which the Diverticulum was attached to the Umbilicus.  
**B** The Diverticulum.  
**C** Its union with the Ileum.  
**D** The upper portion of the Ileum enlarged and extremely vascular.  
**E** The lower portion contracted, and in a state approaching Sphacelus.



**RETURN of the NUMBER of SICK TREATED and of FATAL DISEASES in the  
Proportion of SICK to STRENGTH, &c. &c.**

Year.	Establishment.	Remained in Hospital 1st January.	Admitted during the year with Ophthalmia.	Ditto, with Scarlatina.	Ditto, with Rubeola.	Ditto, with Pertussis.	Ditto, with Varicella.	Ditto, with Varicella.	Ditto, with Epidemic Catarrh.	Ditto, with Common Fevers.	Ditto, with Forigo Capitis.	Ditto, with various Cutaneous Diseases.	Ditto, with Chilblains.	Ditto, with Scrofulous Affections of the Bones and Joints.	Ditto, with other Complaints.	Total treated.	Discharged.	Died.	Average Daily Strength of the Establishment throughout the year.
1825	1000	80	198	49	83	4	7	7	..	304	111	224	123	3	348	1541	1460	8	972
1826	1000	73	136	..	20	12	..	7	55	171	123	220	100	3	648	1574	1505	9	989
1827	1000	60	249	5	1	2	1	4	..	105	132	107	127	2	628	1443	1386	3	979
1828	1000	54	165	16	..	2	..	10	..	101	158	245	8	1	654	1491	1417	14	951
1829	850	60	96	..	..	..	2	5	..	42	118	116	220	4	642	1305	1247	7	806
1830	800	51	107	..	48	..	5	10	..	66	122	58	201	1	782	1451	1393	7	777
1831	800	51	81	..	..	23	..	1	..	136	113	69	154	3	717	1348	1288	8	701
1832	700	52	60	..	..	2	1	..	..	35	94	40	130	3	794	1212	1167	9	611
1833	600	36	59	..	..	5	2	2	140	23	85	37	151	..	603	1143	1106	3	506
1834	450	34	69	38	48	..	..	..	..	79	60	29	65	2	605	1033	1006	3	410
1835	350	24	80	10	1	1	..	2	..	23	34	52	102	1	375	705	672	5	321
1836	350	28	57	1	..	1	3	3	..	31	22	44	76	..	369	635	614	1	279
1837	350	20	30	..	4	..	..	1	60	32	45	261	72	1	277	803	769	3	279
1838	350	31	20	11	..	2	1	3	..	38	24	140	64	..	303	637	607	2	293
1839	350	27	37	7	35	..	..	..	..	45	79	185	47	..	215	677	638	5	314
1840	350	34	38	2	..	10	1	5	..	26	112	176	40	5	244	693	659	3	336
1841	400	31	27	..	..	4	..	..	..	85	113	73	38	1	245	611	588	2	378
Total.	746	1509	139	240	61	23	60	255	1342	1565	2076	1791	10	8449	18302	17522	92		

\* N.B. This Total includes—

Disease of the Spine .....	9
Ditto of the Inferior Maxillary Bone ..	2
Ditto of the Scapula .....	2
Ditto of the Rib .....	1
Ditto of the Shoulder-joint .....	1
Ditto of the Elbow-joint .....	1

HOSPITAL of the ROYAL MILITARY ASYLUM at CHELSEA, with the Average  
From the 1st January, 1825, to 31st December, 1841, inclusive.

Average daily number of sick in Hospital throughout the Year.	Average Proportion of Sick to Average Strength.	Average Proportion of Deaths to total Number of Sick treated.	Proportion of Deaths to Average Strength.	Diseases which have proved fatal in each Year.																				
				Pneumonia.	Pneumonia.	Haemoptoeis.	Gangrene.	Pertussis.	Cynanche Trachealis.	Peritonitis.	Hydrocephalus.	Scirrhus Malignus.	Rheumatism.	Ascariasis.	Labs Mesenterica.	Disease of the Hip-joint.	Disease of the Spine.	Purpura Haemorrhagica.	Icterus.	Febris Typhus.	Scrophulous Abscess of both Kidneys.	Fracture of the Skull.	Abscess in the Brain.	
71	1 in 13 $\frac{7}{10}$	1 in 192	1 in 122	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
65	1 " 14 $\frac{7}{8}$	1 " 175	1 " 108	2	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
62	1 " 15 $\frac{5}{8}$	1 " 481	1 " 325	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
60	1 " 15 $\frac{5}{8}$	1 " 106	1 " 68	2	1	1	1	1	1	1	5	1	1	1	1	1	1	1	1	1	1	1	1	
53	1 " 15 $\frac{1}{2}$	1 " 186	1 " 115	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
48	1 " 16 $\frac{1}{3}$	1 " 207	1 " 111	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
43	1 " 16 $\frac{1}{3}$	1 " 168	1 " 87	2	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	
36	1 " 17	1 " 134	1 " 67	3	1	1	1	1	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	
35	1 " 14 $\frac{1}{2}$	1 " 381	1 " 168	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
32	1 " 12 $\frac{1}{2}$	1 " 334	1 " 136	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
21	1 " 15 $\frac{1}{3}$	1 " 141	1 " 64	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	
18	1 " 15 $\frac{1}{3}$	1 " 635	1 " 279	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
24	1 " 11 $\frac{1}{2}$	1 " 267	1 " 93	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
23	1 " 12 $\frac{1}{2}$	1 " 318	1 " 146	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
25	1 " 12 $\frac{1}{2}$	1 " 135	1 " 65	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	
28	1 " 12	1 " 231	1 " 112	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
26	1 " 14 $\frac{7}{13}$	1 " 305	1 " 189	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
				20	5	3	4	5	1	4	13	1	1	1	7	2	2	1	1	1	1	1	1	1

Disease of the Finger-joint..... 1  
Ditto of the Hip-joint..... 4  
Ditto of the Knee-joint..... 1  
Ditto of the Ankle-joint..... 3  
Ditto of the Tibia and Fibula..... 1  
Ditto of the Metatarsal Bones..... 4

*Tabular Return of Boys who have had Small-pox in the Royal Military Asylum, Chelsea, from Jan. 1825, to Dec. 1841.*

No.	Names.	Date of admission into the Asylum.	On admission reported to have had	When had small-pox in the Asylum.	Age when attacked with small-pox	Remarks.
1	Jno. Law.....	Oct. 1830	Cow-pox	March, 1825	10 yrs.	Had a severe form of the disease, leaving numerous marks.
2	Edwd. Hill.....	June, 1823	ditto	April, 1825	10 "	Had a mild disease.
3	Alex. Leslie.....	Feb. 1825	ditto	April, 1825	10 "	Ditto.
4	Frs. McManus....	May, 1819.	small-pox	May, 1825	12 "	Ditto.
5	Wm. Wilson ....	Aug. 1821	ditto	May, 1825	12 "	Ditto.
6	Frs. Grillon.....	Oct. 1823	Cow-pox	June, 1825	11 "	Ditto.
7	Jno. McIlhanna ..	Oct. 1824	Small-pox	Aug. 1825	10 "	Ditto.
8	George Neil.....	Nov. 1827	Cow-pox	Dec. 1827	6 "	Had a severe and confluent form of the disease, leaving numerous marks, and followed by phlegmonous abscesses.
9	Jno. Gowday.....	June, 1826	ditto	Feb. 1829	9 "	Ditto, leaving numerous marks, and followed by abscesses on the scalp.
10	Owen Mulhearn..	May, 1827	ditto	Nov. 1829	12 "	Had a mild disease.
11	Jno. Rose.....	Feb. 1826	ditto	March, 1830	13 "	Ditto.
12	Wm. Hassell.....	March, 1827	ditto	Aug. 1830	13 "	Ditto.
13	Sam. Hunter.....	April, 1825	ditto	Oct. 1830	11 "	Had a severe disease, leaving a few marks.
14	Peter Loughrea..	Feb. 1829	Small-pox	Oct. 1830	11 "	Had a severe and confluent form of the disease, leaving numerous marks.
15	Dan Weir.....	Jan. 1825	Cow-pox	Oct. 1830	13 "	Had a mild disease.
16	Jno. Flannagan..	March, 1830	ditto	April, 1832	8 "	Ditto.
17	Wm. Foster ....	Aug. 1830	ditto	Feb. 1833	11 "	Ditto.
18	Wm. Salmon.....	June, 1826	ditto	March, 1833	13 "	Ditto.
19	James Froome....	March, 1832	ditto	May, 1836	13 "	Had a confluent form of the disease, leaving permanent marks.
20	James Davie.....	April, 1832	ditto	May, 1836	13 "	Had a mild disease.
21	Wm. Miller.....	Aug. 1830	ditto	June, 1836	13 "	Had a severe and confluent form of the disease, leaving numerous marks.
22	Chas. Mason.....	May, 1832	ditto	June, 1838	13 "	Ditto.
23	Thos. Little.....	Aug. 1837	ditto	Nov. 1840	10 "	Had a mild disease.

### Miscellanies.

#### SYMPATHETIC PARALYSIS.

Dr. ZABRISKIE, an American physician, has related cases of this kind in a late Number of our esteemed contemporary, the American Journal of Medical Sciences, some of which we shall greatly condense, being rather more minutely detailed than appears to be necessary on this side of the Atlantic.

*Case 1.*—This was communicated to the author by Dr. Kissam of Jamaica. Mr. Williamson, of spare habit, had laboured under kidney disease for more than a year. He was unable to walk erect—pain in the region of the kidneys and ureters—perspiration of urinous odour—sallow complexion—tongue furred—breath fetid—bowels costive—frequent micturition—red sediment in the urine. He was treated with mild medicines, and became much improved, and was able to walk about, and even attend a little to his farm. Six months afterwards (June 8, 1840) the doctor was summoned, and found the patient labouring under paraplegia—at least of motion, sensation remaining. Any attempt to move the head induced convulsions and startings in the paralyzed limbs. Excessive pain existed in the lower extremities. Through the catheter, pus, gravel, and mucus were discharged with the urine. The region of the right kidney was enlarged and tense. Appetite was null—tongue foul and brown—perspiration excessive—stools not involuntary. He lingered out till the 10th of July, when he died.

As no dissection took place, the case, though interesting in itself, has no claim to be placed in the category of “sympathetic” paralysis. There can scarcely be a doubt, that, in this instance, there was caries or other affection of the spine producing paraplegia.

Mr. Abernethy has related cases of hemiplegia supervening on hepatitis, and removed when the liver affection gave way. In some cases, where death took place, no disease of the spinal marrow or brain could be detected. But because the structure of these parts does not present visible or tangible alterations from the normal condition, are we to argue from this that no change occurred? *Functional disorders* may induce death, and leave no cognizable trace of the nature or cause of the fatal event.

*Case 2.*—Miss L. aged 16 years, was seized with acute hepatitis in the month of April, 1831. The symptoms were characteristic, but did not give way, and the disease became chronic, accompanied by amenorrhœa, and severe pain in the loins—numbness of the right leg—and ultimately paralysis of that extremity *every afternoon*. In the morning apyrexia, the power of motion, and also sensation returned. Cupping, blistering, and even tissues were used, but without any benefit. Twenty leeches were applied to the region of the liver, which relieved the pain there, and removed the diurnal fever, together with the paralysis. This was a fair case of paralysis sympathetic of liver disease.

*Case 3 —Enteritic Paralysis.*—Thomas Lynch, ætat. 28, sanguine temperament and sober habits, entered the Alms-house in June, 1835, with complete paralysis of the lower extremities, as well as of the sphincters of the bladder and rectum. There was weakness with tenderness in the loins, and constant discharge of bloody mucus from the bowels, with tenderness and pain in the course of the colon. The colitis was treated by calomel, opium, and Dover's powder, while the warm bath, frictions, liniments, leeches, blisters, &c. &c. were prescribed for the paralysis, without any benefit. As the dysentery and abdominal pain continued, leeches were applied to the epigastrium. The next day the patient could move his legs. “From this time the dysentery ceased, and the sphincters regained their power. The leechings were occasionally repeated, and, in a few weeks the patient was able to walk about the wards. This was an instructive case.

*Case 4.*—An old lady, aged 78 years, delicate and dyspeptic, awoke on the

20th August, with much stupor, and sense of great weakness. These increased for two days, when she appeared heavy and dull, with red eyes—apparent inability to raise the eye-lids—flow of saliva from the mouth—dysphagia—quickened pulse—white tongue. On the 24th there was complete paralysis of the left side. The fever appeared paroxysmal, and therefore quinine was prescribed. There were occasional improvements and exacerbations for several days, when recovery began, and progressively increased. “This, says our author, was evidently a case of intermittent paralysis, having an evening exacerbation, and being more severe every second day, the paralysis depending on the same cause as the fever,”

*Case 5.*—Ann Masters, aged 14, was admitted into the Alma-house in 1837, with chronic diarrhœa, for which many remedies had been tried in vain. The lower extremities became gradually weak, and at length paralyzed. The sphincters participated. She died, and, on dissection the colon was found much inflamed, but the chief seat of the disease was in the jejunum, which was in a state of high inflammation, the mucous membrane being pulpy and disorganized. No disease could be detected in the spine or spinal marrow; but the nerves of the lower extremities were greatly wasted in size. The other viscera were sound.

*Case 6.*—Mrs. V. S. was seized with a bilious fever, after accouchement, and this was succeeded by dysentery. This last was attended with a morning chill and an evening re-action. During the pyrexia there were tonic spasms of various muscles, both in the extremities and in other parts. Twenty grains of calomel were given internally, and sinapisms were applied to the feet and spine. Next day it was found that the calomel had changed the appearance of the stools. A blister to the epigastrium, and two grains of calomel with five of Dover's powder, were given every three hours. In three days, the mouth became affected and the spasms and dysenteric symptoms subsided. Some months afterwards this woman was again seized with dysentery: but, instead of the spasms, she had now numbness of the lower limbs with nearly total loss of power in them. She was entirely helpless in the arms; but could swallow and speak without difficulty. There were no cerebral symptoms, and the sphincters retained their power. The lower dorsal vertebræ were tender. Twenty-five grains of calomel were given to her, with one of opium. A sinapism to the epigastrium. This was followed by dark-coloured evacuations. An ounce of castor-oil, which acted freely. A grain of calomel with ten of Dover's powder was given every four hours. Next day the dysentery was relieved, and the paralytic symptoms diminished. The same powders continued. She quickly recovered.

“The reasons for believing this species of paralysis as sympathetic of enteritis may be briefly summed up as follows:—

1. The inflammation always precedes the paralysis, and often for some time. This took place in Dr. Waddell's case, in all the cases of Mr. Abernethy, and in all the cases observed by myself, the diarrhœa preceded the paraplegia.

2. From the absence of all morbid appearances upon dissection, the nervous apparatus appearing sound.

3. From the inutility of all remedies applied to the spine, to the brain, or to the general nervous system.

4. The remedies which gave most relief were those which relieved the inflammatory symptoms.

The diagnosis of this form of paraplegia may be attended with difficulty. But it may be distinguished from cerebral paralysis by the absence of all symptoms of diseased brain. From the paralysis arising from a disease of the spine by the absence of the severe pain, and tenderness upon pressure in a diseased state of the vertebræ, by the existence of visceral inflammation, by the effect of remedies used for enteritis, and by the gradual manner of its approach.

The practice which I have found most successful is that calculated to subdue the inflammatory symptoms.

Bleeding general and local to subdue the phlogosis, accompanied by evacuants, followed by mercurials when these symptoms abate, to change the morbid secre-

tions, and, by counter-irritation, to divert the inflammation. When the inflammatory symptoms have somewhat subsided, strychnine forms an excellent and valuable remedy in paraplegia.”—*American Jour. Med. Sciences*, Oct. 1841.

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#### TWELFTH ANNUAL REPORT OF THE BELFAST DISTRICT LUNATIC ASYLUM. MARCH, 1842.

The following sensible passage on this well-conducted Asylum, bears on a “*vera quæstio*” of the present day.

##### RESTRAINT OF PATIENTS.

“The cases in which instrumental restraint,—by the imposition of a strait-waist-coat on the person, or muffs on the hands,—was obliged to be had recourse to, from time to time, during the past year, were confined to about four out of the entire number of inmates; and these almost exclusively amongst the females, some of whom were so uncontrollably violent in their general conduct, as well as destructively inclined, that all other methods were found totally inefficient, as moral agents, in repressing their disposition to commit acts of outrage, personal and otherwise. One of the females, in particular, for several months past, has been most unconquerable in destructive and turbulent propensities, by breaking windows, doors, and locks; stripping off and tearing her clothes, striking the attendants, &c. &c.; neither persuasions, or threats, or even the offering of a reward, for ordinary good conduct, when tried at large, having the least effect in deterring her from the commission of such acts as the above; and not only does she behave in this insubordinate manner herself, but, in her morbid proneness to mischief, endeavours to make other patients equally unruly, and to a certain extent, succeeds in doing so: thus keeping up, day and night, at intervals, a harassing state of excitement and riot in the division to which she belongs; but these interruptions, in the entire personal freedom, general order and comparative quietude which ordinarily prevail in the establishment, are, after all, but of small moment, and wonderfully few, when we consider the deplorable nature of the mysterious malady its unhappy inmates are the subjects of.

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#### HANWELL LUNATIC ASYLUM.

We have much pleasure in recording the recent delivery of a series of clinical lectures in this Institution, with admission to what may be termed the practice of the Asylum. Great credit is due both to Dr. Conolly for his exertions in bringing it about, and to the Visiting Justices for their boldness and liberality in consenting to the experiment, notwithstanding the numerous objections which were urged against it, and the prejudices which it had to encounter. It must be a source of great satisfaction to all concerned, to find that the experiment has succeeded so well, that no excitement appears to have been produced amongst the patients by the visits of the students, whilst the students have had an opportunity of acquiring, for the first time, much valuable information upon a subject, the study of which has hitherto been attended with so many difficulties.

The plan adopted with regard to the admission was, to give to each of the principal Metropolitan hospitals, the privilege of sending one of their more advanced pupils; thus at once reducing the number within the necessary limits, and by having only senior pupils present, rendering it unnecessary to occupy any valuable time with the more elementary parts of the subject.

We shall refrain from noticing more particularly the lectures themselves at present, as we are not without hopes that Dr. Conolly may be induced soon to publish them in some form or other, an address having been presented to him to that effect at the last lecture.

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*There is a prodigious improvement in the manner and matter of this our contemporary, since the late editorial change.*

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## TO CORRESPONDENTS, &c.

### SOCIETY FOR IMPROVING THE CONDITION OF THE INSANE.

This Society has been formed under distinguished auspices, lay and professional, and for the most laudable purposes. This Society proposes to offer premiums, for the present year, as follows:—

1. To the author of the best essay on the arrangement and nomenclature of mental disorders, a premium of 20 Guineas.
2. To the male attendant who shall produce the best testimonials, a premium of 5 Guineas.
3. To the female attendant who shall produce the best testimonials, a premium of 5 Guineas.

The essays and testimonials to be addressed to Mr. T. C. Morison, 397, Oxford Street, London, Honorary Secretary, (pro tempore,) of the Society for improving the condition of the Insane, on or before the first day of November, 1842.

### DR. MONTGOMERY ON PREGNANCY.

We perceive with satisfaction that the favourable opinion expressed of Dr. Montgomery's work in this Journal (Jan. 1838) has been amply confirmed by the general assent of the profession and public, not only in these countries, but on the Continent and in America.

It has been translated into German at Bonn, at the recommendation of Professor Kilian, who has added an introductory chapter, and thereby given a practical proof of the high estimation in which the book is held by so competent a judge; it has also been re-printed in America, and we are informed that the re-print there is already exhausted and that it is the highest charged book in the States.

Mr. Roberts, Assistant-Surgeon 59th, and many other correspondents, are thanked, for their communications; but they will perceive a notice in the last number of the Journal that the Editors have determined not to insert original communications in future.

## CONTENTS.

**OF THE**

## MEDICO-CHIRURGICAL REVIEW.

No. LXXIV. OCTOBER 1, 1842.

[BEING No. XXXIV. OF A DECENNIAL SERIES.]

## REVIEWS.

I.

- |  |  |                               |  |            |
|--|--|-------------------------------|--|------------|
| <b>Animal Chemistry ; or Organic Chemistry</b> | <b>in its Application to Physiology and Pathology.</b> | <b>By JUSTUS LIEBIG, M.D.</b> | <b>Edited by WILLIAM GREGORY, M.D.</b> | <b>337</b> |
| 1. Nutrition and Reproduction                  | - - - - -  | - - - - -                     | - - - - -                              | <b>337</b> |
| 2. Metamorphoses of Tissues                    | - - - - -  | - - - - -                     | - - - - -                              | <b>350</b> |
| 3. Composition of Organic Tissues              | - - - - -  | - - - - -                     | - - - - -                              | <b>353</b> |
| 4. Theory of Disease                           | - - - - -  | - - - - -                     | - - - - -                              | <b>367</b> |
| 5. Theory of Respiration                       | - - - - -  | - - - - -                     | - - - - -                              | <b>369</b> |

## II.

- Elements of General Pathology.** By the late JOHN FLETCHER, M.D. Edited by JOHN J. DRYSDALE, M.D. and JOHN R. RUSSELL, M.D. . . . 371

### III.

- |   |           |     |
|---|-----------|-----|
| A Practical Treatise on the Diseases of the Scalp. By JOHN E. ERICHSEN, |           |     |
| M.R.C.S. &c.  | - - - - - | 379 |
| 1. Treatment of Scalp Diseases  | - - - - - | 331 |
| 2. Vesicular Diseases   | - - - - - | 385 |
| a. Acute Eczema of the Scalp  | - - - - - | 385 |
| b. Chronic Eczema   | - - - - - | 386 |
| c. Herpes Circinnatus   | - - - - - | 389 |
| 3. Pustular Diseases of the Scalp                                       | - - - - - | 390 |
| a. Impetigo   | - - - - - | 390 |
| 4. Squamous Diseases of the Scalp                                       | - - - - - | 397 |
| a. Pityriasis   | - - - - - | 397 |
| b. Alopecia   | - - - - - | 397 |

#### IV.

## DISEASES OF THE URINARY ORGANS.

- |  |   |     |
|--|---|-----|
| I. Traité Pratique sur les Maladies des Organes Génito-Urinaires. Par le Docteur CIVIALE | } | 401 |
| A Practical Treatise upon the Diseases of the Genito-Urinary Organs. By Dr. CIVIALE      |   |     |
| II. Lectures on the Diseases of the Urinary Organs. By Sir BENJAMIN C. BRODIE, Bart.     | } | 401 |
| 1. Diseases of the Neck of the Bladder   |   |     |
| a. Neuralgia of the Neck of the Bladder  |   |     |
| b. Affections of the Vesiculae Seminales and Ejaculatory Ducts                           |   |     |
| 2. Diseases of the Prostate  |   |     |

A. Enlarged Prostate	419
B. Suppuration of the Prostate	416
C. Atrophy of the Prostate	416
D. Prostatic Calculi	417
3. Diseases of the Body of the Bladder	417
A. Fungus and Polypus of the Bladder	417
B. Tumours of the Bladder	417
C. On the forced Sojourn of Urine in the Bladder	419
D. Incontinence of Urine	423
E. Hæmaturia	426
F. Catarrh of the Bladder	429
4. Stricture of the Male Urethra	436
A. Combination of Stricture with Enlarged Prostate	438
B. Introduction of the Bougie	438
C. Treatment of Retention from Spasmodic Stricture	440
D. Treatment of Stricture in the Anterior Part of the Urethra	442
E. Division of Stricture	443
F. Fistulæ in Perineo	446
G. Obstructions of the Urethra arising from Mechanical Injury	447
H. Incontinence of Urine	450
5. Lithotrixy	452
V.	
The Cyclopædia of Practical Surgery, &c. Edited by WILLIAM B. COSTELLO, M.D.	
Part XI.	457
1. Dr. Macdonnell on Fracture	457
VI.	
La Clinique des Hôpitaux des Enfans, &c. No. 10	463
1. Dr. Cheneau on the Causes of the Predisposition of Tubercles for the Lungs	465
2. Dr. Becquerel on Bronchial Ganglionic Phthisis in Children	466
3. M. Berton on Bronchial Phthisis	470
4. Observations on the Relations subsisting between Pregnancy and Delivery, and the Health of the Infant before and after Birth	476
VII.	
The Climate of the South of Devon, and its Influence on Health, &c. &c.	
By THOMAS SHAPTER, M.D.	491
1. Climate of Devon	492
2. Diseases of the Lungs	493
3. Description of Particular Localities	494
VIII.	
The Simple Treatment of Disease deduced from the Methods of Expectancy and Revulsion. By JAMES M. GULLY, M.D.	497
IX.	
Solution du Probleme de la Population, et de la Subsistence, &c. Par CHARLES LOUDON, M.D.	501
X.	
The Spas of Homburg. By SIR ALEXANDER DOWNIE	503
1. Analytical Table of the Springs of Homburg	504

**PERISCOPE.****Bibliographical Notices.**

1. On the Hydrothalic Cure of Gout. By G. Hume Weatherhead, M.D. . . . .	509
2. Hastings considered as a Resort for Invalids, &c. By James Mackness, M.D. . . . .	511
3. The Evolution of Light from the Living Human Subject. By Sir Henry Marsh, Bart. M.D. . . . .	513
4. Deformities of the Spine and Chest, successfully treated by Exercise alone : and without Extension, Pressure, or Division of Muscles. By Charles H. Rogers-Harrison, Esq. . . . .	515
5. The Surgeon's Vade Mecum. By Robert Druitt, Esq. Second Edition . . . . .	520
6. An Essay on Diabetes. By H. Bell, D.M.P. Translated by Alfred Markwick, Esq. . . . .	520
7. On the different Forms of Insanity, in Relation to Jurisprudence. By James Cowles Prichard, M.D. . . . .	522

**Spirit of the Foreign Periodicals, &c.**

1. Death of M. Double : History of his last Illness : Funeral Orations . . . . .	529
2. M. Dumas on the Chemistry of Organized Beings . . . . .	534
3. M. Longet and his Vivisections again . . . . .	536
4. On the Movements and Sounds of the Heart; Report to the British Association, &c. . . . .	539
5. Influence of Tobacco on Phthisis . . . . .	541
6. History of an Epidemic Meningitis; followed by Comments on French Medicine . . . . .	541
7. Can the Future State of the Milk be predicted during Pregnancy ? . . . .	549
8. On the Qualities of the Milk, and the Means of ascertaining them . . . . .	550
1. The Milk becomes thinner by remaining in the Breasts . . . . .	551
2. Formation of the Milk : the Colostrum . . . . .	551
3. Chapped Nipples . . . . .	552
9. Adulteration of Milk with Cerebral Matter . . . . .	552
10. On Suicide . . . . .	552
11. Hysteria; Catalepsy; Metastasis of Hearing, &c. . . . .	557
12. Deafness cured by the Endermic Use of Morphia . . . . .	559
13. The Surgical Practice at the Hôtel Dieu . . . . .	560
A. Results of Operations . . . . .	560
B. Stammering; Section of the Tongue; Failure . . . . .	561
14. M. Rayer on Phthisis . . . . .	562
15. Development of Cryptogamæ in the Bodies of Animals : Treatment of Tinea . . . . .	563
16. Oxalic Acid a Remedy in Mucous Inflammations . . . . .	564
17. Tincture of Creosote . . . . .	565
18. M. Orfila on the Absorption of Chemical Substances into the Blood, &c. . . . .	565
19. Hints on the Management of Infants . . . . .	566
20. Physiological Laws or Maxims . . . . .	568
A. On Digestion . . . . .	568
B. The Organs of Circulation . . . . .	571
C. Of the Respiration . . . . .	572
21. Account of the Death of the Duke of Orleans . . . . .	574

**Clinical Review, and Hospital Reports.****UNIVERSITY HOSPITAL.**

1. A Case of Aneurysms within the Skull, terminating in Paralysis. By A. T. Thomson, M.D. . . . .	577
---	-----

**PENNSYLVANIA HOSPITAL.**

2. A Case of Inguinal Aneurysm treated successfully by a Ligature to the External Iliac Artery. By Edw. Pearce, M.D. . . . .	579
--	-----

**LEEDS GENERAL INFIRMARY.**

3. Report of Cases treated by Mr. T. P. Teale . . . . .	580
Case 1. Strangulated Hernia—Operation—Sac not opened . . . . .	580

<i>Case 2. Compound Fracture of the Cranium—Depression of Bone, &amp;c.</i>	581
<i>Case 3. Strangulated Ventral Hernia</i>	582

NEW-YORK HOSPITAL.

4. Scrofulous Ulcer of the Neck penetrating the inferior Thyroid Artery	533
HOTEL DIEU.	

5. Clinical Practice of M. Roux	584
1. Amputations	584
2. Excision of Joints	585
6. Case of Lesion of Sensibility and Motion in a person labouring under Syphilis. By Paul William Swain, Esq.	586
7. Surgical Cases and Observations. By James Syme, Esq.	587
Nasal Polypus	587
8. Statistics of Operations	588
Remarks on Amputations. By Alexander King	588

Spirit of the British and American Periodicals, &c.

1. Mesmero-phenology	593
2. Cartilaginous Disease with Perforation of the Stomach. By Dr. Kennion	596
3. Case of Venous Hæmorrhage from an Abscess. By Robert Storrs, Esq.	597
4. Case of Lardaceous Cancer of the Cranium. By Alfred Baker, Esq.	598
5. Fracture of the Fore-arm; Gangrene produced by the Application of a Starched Bandage	600
6. Case of Amputation of the Leg, with some Observations on a New Mode of Amputating. By Thomas Green, Esq.	600
7. On Benzoic Acid in Urinary Disorders. By John Smith Soden, Esq.	601
8. Mind or Matter? That is the Question*	602
9. Cases with Observations on certain Malignant Diseases of the Head and Face. By L. Byron, M.D.	604
1. Melanosis of the Eye	604
2. Case of Fungus Hæmatodes extending within the Cranium	606
3. Malignant Osteo-sarcoma of the Lower Jaw	607
10. Observations on Hypertrophy of the Brain in Children. By Cathcart Lees, M.B.	608
11. Observations on Discolouration of the Skin from the Internal Use of Nitrate of Silver, &c. By Charles Patterson, M.D.	610
12. On the Use of the Iodide of Potassium in Ophthalmic Diseases. By Isaac Parrish, M.D.	612
13. Case of Penetrating Wound of both Lungs—Recovery. By A. N. Ruddock, Esq.	614
14. Case of Tubarian Gestation, with Rupture of the Cyst containing the Embryo. By R. M. Glover, M. D.	615
15. Case in which an Aortic Aneurysm burst into the Bronchus	616
16. Pharmacy in Great Britain	617
17. Traumatic Tetanus successfully treated by the Sesquicarbonate of Iron. By Geo. Woollam, M.D.	618
18. Treatment of Encysted Tumours by Crocote	618
19. Free Trade in Education and Quackery	619
20. Citrate and Ammonio-Citrate of Iron	621
21. Artificial Harrowgate Water	621
Harrowgate Salts	621
BIBLIOGRAPHICAL RECORD	623

Extra-Limites.

1. Notes on the present Condition of the Medical Department of the Indian Army. By James R. Martin, Esq.	625
2. Letter from Mr. Liddell to Sir William Burnett, on an Accident which occurred to a Diver whilst at work on the Wreck of the Royal George	633

\* For Dr. Elliotson in this article, read Dr. Engledew.

THE  
**Medico-Chirurgical Review,**

No. LXXIV.

[NO. 34 OF A DECENNIAL SERIES.]

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JULY 1, TO OCTOBER 1, 1842.

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ANIMAL CHEMISTRY; OR ORGANIC CHEMISTRY IN ITS APPLICATIONS TO PHYSIOLOGY AND PATHOLOGY. By *Justus Liebig*, M.D. &c. Edited by *William Gregory*, M.D. London, Taylor and Walton, 1842.

THIS truly interesting work consists of three parts. The first part contains a minute examination of the processes employed in the nutrition and re-production of the various structures of the animal economy. In animals and vegetables we recognize the existence of a certain force, the source of growth and of re-production, in a state of rest, or, to use the author's term, of static equilibrium. This state of rest becomes disturbed by the action of external influences, by impregnation, and the presence of air and moisture; by these influences, it enters into a state of motion or activity, and exhibits itself in the production of forms. To this force the appellation of *vital force*, or *vitality*, has been given. The growth of a vegetable is effected by a decomposition which takes place in some parts of it under the influence of light and heat; and it is to be observed that it is exclusively inorganic matter, which is thus decomposed; and if with several eminent mineralogists we consider atmospheric air to be a mineral, we may lay it down that the vital process in vegetables effects the transformation of mineral substances into a living organism. The increase of mass in a living plant implies that certain component parts of its nourishment become component parts of the plant; the fact is now established, that the growth of plants depend on the elimination of oxygen, which is separated from the other component parts of the nourishment, which is separated from the other component parts of the nourishment, whilst the life of animals exhibits itself in the continual absorption of oxygen, and its combination with certain component parts of the animal body. Another distinction between animal and vegetable life is that, whilst vegetables require inorganic matter as food, animals, on the contrary, require highly organized atoms for their support. They can, in fact, only subsist upon parts of an organism. Animals are distinguished from vegetables by the faculty of locomotion, and, in general, by the possession of senses. These distinguishing faculties depend on the presence of a nervous apparatus, of which vegetables are destitute. The phenomena of motion in vegetables, as the circulation of the sap and the closing of flowers and leaves, depend

on mechanical causes. Assimilation, or the process of growth, goes on in the same way in animals and vegetables. In both, the same cause determines the increase of mass. This constitutes the true vegetative life, which is carried on without consciousness. Pathology informs us that the true vegetative life in animals is not dependent on the presence of this nervous apparatus; as the process of nutrition proceeds in those parts of the body where the nerves of sensation and voluntary motion are paralysed; whilst, on the other hand, the most energetic volition is unable to exert any influence on the contractions of the heart, on the motion of the intestines, or on the processes of secretion.

The phenomena of mind, of the proximate or ultimate causes of which we know nothing, we ascribe to an immaterial agency, one which, so far as its manifestations are connected with matter, is entirely distinct from the vital force, with which it has nothing in common. This force, however, exerts a certain influence on the activity of vegetative life, an influence by no means of a determinative kind, as it merely accelerates, retards, or disturbs the process of vegetative life. In a manner exactly analogous, the vegetative life re-acts on the conscious mental existence.

All the parts of the animal body are produced from a peculiar fluid circulating in its organism, by virtue of the vital force residing in every organ or part of an organ. All the parts of the body were originally blood, or at least these parts were brought to the growing organs by means of the blood. At each moment of life a continued change of matter is going on in the animal organism; a part of the structure is transformed into unorganised matter, loses its condition of life, and must be again renewed. Every motion, every manifestation of force, is the result of a transformation of the structure, or of its substance. Every conception, every mental affection is followed by changes in the chemical nature of the secreted fluids; every thought, every sensation, is accompanied by a change in the composition of the substance of the brain. To keep up the phenomena of life in animals, nourishment is required; this serves either for the increase of the mass, (nutrition,) or for the supply of the matter consumed, (re-production,) or for the production of force.

The first condition of animal life is the assimilation of food, and the second is the continual absorption of oxygen from the atmosphere.

All vital activity results from the mutual action of the oxygen of the atmosphere and the elements of the food. All changes proceeding in the body are decidedly of a chemical nature, although they are sometimes increased or diminished in intensity by the influence of the vital force. The action of poisons and of medicinal agents on the living animal body shows that the chemical decompositions and combinations which manifest themselves in the phenomena of vitality, may be influenced by bodies having a well-defined chemical action. As in the closed galvanic circuit, in consequence of certain changes which an inorganic body, a metal, undergoes when placed in contact with an acid, a certain something becomes cognizable by our senses, which we call a current of electricity; so in the animal body, in consequence of transformations undergone by matter previously constituting a part of the organism, certain phenomena of motion and activity are perceived; and these are called life or vitality. The electrical current manifests itself in certain phenomena of attraction and repulsion,

which it excites in other bodies naturally motionless, and by the phenomena of the formation and decomposition of chemical compounds, which occur every where, when the resistance is not sufficient to arrest the current. It is from this point of view and no other that chemistry ought to view the various phenomena of life. The first conditions of animal life are nourishment and oxygen introduced into the system.

According to Lavoisier, an adult man takes into his system from the atmosphere, in one year, from 700 to 800 lbs of oxygen; and yet he does not increase in weight. What becomes of the enormous weight of oxygen thus introduced in the course of a year into the human system? The answer is: the carbon and hydrogen of certain parts of the body have entered into combination with the oxygen introduced through the lungs and through the skin, and have been given out in the forms of carbonic acid gas and the vapour of water. At every moment, with every expiration, certain parts of its elements are separated from the animal organism, after having entered, within the body, into combination with the oxygen of the atmosphere. It is ascertained that an adult inspires  $32\frac{1}{2}$  ounces of oxygen daily, = 15,661 grains, French weight, and that the weight of the whole mass of his blood, of which 80 per cent is water, is 24 lbs.; accordingly there are in the body of the adult 4.8 lbs. of dry blood, for the combustion of the carbon and hydrogen of which 64,103 grains of oxygen are required. Thus, then, pre-supposing the weight of the body to remain unchanged, the body of a man who takes daily into the system  $32\frac{1}{2}$  ounces of oxygen, must receive daily in the shape of nourishment as much carbon and hydrogen as would suffice to supply 24 lbs. of blood with these elements. This supply is derived from the food. It appears that an adult taking moderate exercise consumes as much food as yields about 14 ounces of carbon daily, which require 37 ounces of oxygen for their conversion into carbonic acid.

Since no part of the oxygen inspired is again expired as such, but is given off as a compound of carbon or hydrogen, and also since the carbon and hydrogen given off must be replaced by carbon and hydrogen derived from the food, it follows that the amount of nourishment required in the animal body is directly proportional to the quantity of oxygen taken into the system: or what comes to the same thing, as the quantity of oxygen taken in may be expressed by the number of respirations, the quantity of nourishment required must vary with the number and force of the respirations; thus a child in whom the respiratory organs are naturally very active, requires food oftener than an adult, and bears hunger less patiently. A bird deprived of food dies on the third day, while a serpent, with its sluggish respiration, can live without food three months and more. For the same reason, the quantity of food required by an individual in a state of rest is less than that required during exercise or work, the number of respirations being smaller in the former case than in the latter. The quantity of oxygen inspired is also affected by the temperature and density of the atmosphere. The capacity of the chest in an animal being a constant quantity, it is evident that he takes in the same *volume* of air at each inspiration; hence as air is expanded by heat and contracted by cold, equal volumes of hot and cold air contain unequal weights of oxygen; in Summer also, the air contains aqueous vapour, whilst in Winter it is



dry, that is, it contains, for the same volume, more oxygen in Winter than in Summer. For the same reason, in an equal number of respirations we consume more oxygen at the level of the sea than on a mountain; hence the quantity of oxygen inspired and of carbonic acid expired must vary with the height of the barometer. The oxygen taken into the system being given out in the same forms, whether it be Summer or Winter, we expire more carbon in cold weather than we do in warm weather; and we must consume more or less carbon in our food in the same proportion; in our climate an eighth more in Winter than in Summer. Even when equal weights of food are consumed in warm and cold countries, infinite wisdom has so arranged it that the articles of food in different climates yield very unequal proportions of carbon. The fruits on which the natives of the South prefer to feed do not contain more than 12 per cent. of carbon, while the bacon and train oil used by the inhabitants of the Arctic regions contain from 66 to 80 per cent. of carbon.

The mutual action between the elements of the food and the oxygen conveyed by the circulation of the blood to every part of the body is the *source of animal heat*. All living creatures, whose existence depends on the absorption of oxygen, possess within themselves a source of heat independent of the medium in which they live. This heat is the result of the combination of a combustible substance [carbon and hydrogen] with oxygen—we see that animal heat is produced only in those parts of the body to which arterial blood, and with it the oxygen absorbed in respiration is conveyed. The carbon and hydrogen of the food, in being converted by oxygen into carbonic acid and water, must give out as much heat as if they were burned in the open air. The only difference is, that the amount of heat produced is diffused over unequal spaces of time. It is obvious that the amount of heat liberated must increase or diminish with the quantity of oxygen introduced in equal times by respiration. Those animals which respire frequently and consequently consume much oxygen, possess a higher temperature than others, which, with a body of equal size to be heated, take into the system less oxygen. The temperature of the human body is the same in the torrid as in the frigid zone. But as the body may be considered in the light of a heated mass, which cools with an accelerated rapidity the colder the surrounding medium is, it is evident that the fuel necessary to sustain its heat must vary in different climates. Hence we see how unequal the loss of heat must be in a man at Palermo, where the external temperature is nearly equal to that of the body, and in the polar regions, where the external temperature is from 70° to 90° lower. The supply of heat lost by cooling is effected by the mutual action of the elements of the food and the inspired oxygen, which combine together. The animal body acts, in this respect, as a furnace, which we supply with fuel. In order to keep up in the furnace a constant temperature we must vary the supply of fuel according to the external temperature, that is, according to the supply of oxygen. Now in the animal body the food is the fuel; with a proper supply of oxygen we obtain the heat given out during its combustion. In Winter, when we take exercise in a cold atmosphere, and when therefore the amount of inspired oxygen increases, the necessity for food containing carbon and oxygen increases in the same ratio, and by gratifying the appetite thus

excited, we obtain the most efficient protection against the cold. A starving man is soon frozen to death; and it is well known that the animals of prey in the arctic regions far exceed in voracity those of the torrid zone.

Our clothing is an equivalent for a certain amount of food. The more warmly we are clad, the less urgent becomes our appetite for food, the loss of heat by cooling, and consequently the amount to be supplied by the food, being diminished. If we went naked, like some savage tribes, or if in hunting or fishing we were exposed to the same degrees of cold as the Samoyedes, we should be able with ease to consume 10lbs. of flesh, and perhaps a dozen of tallow candles into the bargain, daily, as warmly-clad travellers have related with astonishment of these people. We should then be able to take the same quantity of brandy or train oil without bad effects, because the carbon and hydrogen of these substances would only suffice to keep up the equilibrium between the external temperature and that of our bodies. Thus then we may lay it down, that the quantity of food is regulated by the number of respirations, by the temperature of the air, and by the amount of heat given off to surrounding objects. We now have an explanation of the apparently anomalous habits of different nations. The colder the region, the more combustible must the food be. The Italian cannot, with impunity, take more carbon and hydrogen in the shape of food than he expires as carbonic acid and water; nor can the Greenlander expire more carbon and hydrogen than he takes into the system as food, unless in a state of disease or starvation. The Englishman in Jamaica perceives with regret the disappearance of his appetite, previously a source of frequently recurring enjoyment; and he succeeds by the use of aromatics and powerful stimulants in enabling himself to take as much food as he was accustomed to at home. But he thus unfits himself for the climate in which he is placed; for sufficient oxygen does not enter the system to combine with the carbon introduced into the system; some of this carbon therefore remains unconsumed; and the heat of the climate prevents him from taking exercise so as to increase the number of his respirations, and thus to proportion the waste to the amount of food taken; the consequence of this then is disease of some kind, the unconsumed carbon being forced into other channels. On the other hand, England sends her dyspeptic invalids to southern regions. In their native climate their impaired digestive organs are unable to fit the food for that state in which it best unites with the oxygen of the air, which therefore acts on the respiratory organs themselves. When they are removed to a warmer climate, they absorb less oxygen and take less food; and the diseased organs of digestion have sufficient power to place the diminished amount of food in equilibrium with the respired oxygen. In conformity with these views in our own climate, hepatic diseases, or diseases arising from excess of carbon, are more prevalent in Summer, and in Winter pulmonary diseases, or those arising from an excess of oxygen.

We have here assumed that the production of animal heat is effected more especially by the combination of carbon and hydrogen with oxygen. The entire process of respiration appears most clearly developed when we consider the state of a man or other animal totally deprived of food. The first effect of starvation is the disappearance of fat, and this fact cannot be traced either in the urine or fæces. Its carbon and hydrogen have

been given off through the skin and lungs in the form of oxidized products; they must have served to support respiration. In the case of a starving man 32½ ounces of oxygen enter the system daily, and are given out again in combination with part of his body. The whole history of hibernating animals, and the well-established facts of the periodical accumulation, in various animals, of fat, which, at other periods, entirely disappears, prove that the oxygen, in the respiratory process, consumes, without exception, all such substances as are capable of combining with it. It combines with whatever is presented to it; and the deficiency of hydrogen is the only reason why carbonic acid is the chief product.

In the progress of starvation, it is not only the fat which disappears, but also, by degrees, all such of the solids as are capable of being dissolved; such as the muscles which become shrunk and soft. Towards the end the particles of the brain begin to undergo the process of oxidation, and delirium, mania and death close the scene; that is, all resistance to the oxidizing power of the atmospheric oxygen ceases, and the chemical process of decay commences in which every part of the body, except the bones, enters into combination with oxygen. The time required to cause death by starvation depends on the amount of fat in the body, on the degree of exercise, on the temperature of the air, and, lastly, on the presence or absence of water. In some cases, where a full supply of water was accessible to the sufferer, death has not occurred till after a lapse of twenty days.

In all chronic diseases death is produced by the same cause; viz. by the chemical action of the atmosphere. In the absence of those substances, whose function in the organism is to support the process of respiration; when the diseased organs are incapable of performing their proper function of producing these substances; when they have lost the power of transforming the food into that shape in which it may, by entering into combination with the oxygen of the air, protect the system from its influence, then the substance of the organs themselves, the fat of the body, the substance of the muscles, the nerves and the brain, are unavoidably consumed. The action of the air is the true cause of death in these cases.

A deficiency of food and a want of power to convert the food into a part of the organism are both, equally, a want of resistance; and this is the negative cause of the cessation of life. The flame is extinguished because the oil is consumed, and it is the oxygen of the air which has consumed it.

Some have attributed a part of the heat generated in the animal body to the action of the nervous system. Professor Liebig says that if this view exclude chemical action, or changes in the arrangement of the elementary particles, as a condition of nervous agency, it means nothing else than to derive the presence of motion, the manifestation of a force, from nothing. The idea that the production of animal heat is purely the result of nervous agency seems to have arisen from the notion that the inspired oxygen combines with the carbon in the blood itself. Nothing can however be more erroneous than such an idea. That the nervous system has a share in the respiratory function no one will deny; as no change of condition can occur in the body without the nerves, they being

essential to all motions. It is under their influence the viscera produce those compounds, which, while they protect the organism from the action of oxygen, give rise to animal heat. On cutting through the pons Varolii, the spinal cord, or par vagum, the respiratory motions continue for some time; but the oxygen does not meet with those substances with which, in the normal state, it would have combined: because the paralyzed viscera no longer furnish them. The author next proceeds to prove that animal heat is not indebted for its production to muscular contraction. The contraction of muscles produces heat; but the force necessary for such contraction has manifested itself through the organs of motion, in which it has been excited by chemical changes. The ultimate cause of the heat produced is therefore to be found in these chemical changes.

There are various causes by which force or motion may be produced. A bent spring, a current of air, the fall of water, fire applied to a boiler, the solution of a metal in an acid—all these different causes of motion may be made to produce the same effect. But in the animal we recognize as the ultimate cause of all force only one cause, the chemical action which the elements of the food and the oxygen of the air mutually exercise on each other. The only known ultimate cause of vital force, either in animals or plants, is a chemical action. He next proceeds to show that the heat evolved by the combustion of carbon is sufficient to account for the production of animal heat. One ounce of carbon evolves, during its combustion, as much heat as would raise the temperature of 105 ounces of water at  $32^{\circ}$  to  $167^{\circ}$ , that is, by  $135^{\circ}$ ; in all therefore 105 times  $135^{\circ} = 14207$  degrees of heat. Therefore the 13.9 oz. of carbon which are daily converted into carbonic acid in the body of an adult, evolve  $13.9 \times 14207 = 197477.3$  degrees of heat. This amount of heat is sufficient to raise the temperature of one ounce of water by that number of degrees, or from  $32^{\circ}$  to  $197509.3^{\circ}$ , or to cause 136.8lbs. of water at  $32^{\circ}$  to boil; or to heat 370lbs. of water to  $98.3^{\circ}$ , (the precise temperature of the human body); or to convert into vapour 24lbs. of water at  $98.3^{\circ}$ . And if we assume that the quantity of water vaporized through the skin and lungs amounts to 3lbs., we still have 146380 degrees of heat remaining, which are dissipated by radiation, by heating the exposed air, and in the excrementitious matters. And when we take into account the heat evolved by the hydrogen of the food, and the small specific heat possessed by the organs generally, no doubt can be entertained that the heat evolved in the process of combustion to which the food is subjected in the body, is amply sufficient to explain the constant temperature of the body, as well as the evaporation from the skin and lungs. From what has preceded, it follows that the amount of carbon consumed in food should depend on the climate, density of air, and the occupation of the individual.

The professor, having now discussed the source of animal heat, next proceeds to consider what are the ingredients of the food which may properly be considered to be nutritious—now if we hold that increase of mass in the animal body, the development of its organs and the supply of waste, are all dependent on the blood, those substances only can be considered nutritious, which are capable of conversion into blood. To determine, therefore, what substances are capable of affording nourishment, it is only necessary to ascertain the composition of the food, and to compare it with

that of the ingredients of the blood. The chief ingredients of the blood, fibrine and albumen, contain in all seven chemical elements, among which nitrogen, phosphorus, and sulphur are found. They contain also the earth of bones. Chemical analysis has led to the remarkable result that fibrine and albumen contain the same organic elements united in the same proportion; the particles however constituting them are arranged in a different order; but in the ultimate proportion of the organic elements they are identical. Both albumen and fibrine, in the process of nutrition are capable of being converted into muscular fibre, and muscular fibre is capable of being re-converted into blood. If we now compare the composition of all organized parts with that of fibrine and albumen, the following relations present themselves:—All parts of the animal body which have a decided shape, which form parts of organs, contain nitrogen. No part of an organ which possesses motion and life, is destitute of nitrogen; all of them contain likewise carbon and the elements of water, the latter, however in no case in the proportion to form water. The chief ingredients of the blood contain nearly 17 per cent of nitrogen, and no part of an organ contains less than 17 per cent of nitrogen.

It has been proved that the animal body is incapable of producing an elementary body, such as carbon or nitrogen, out of substances which do not contain it; and it follows that all kinds of food fit for the production either of blood, or of cellular tissue, membranes, skin, hair, &c. must contain a certain amount of nitrogen, that element being essential to the composition of the above-named organs, because the organs cannot create it from the other elements presented to them; and finally, because no nitrogen is absorbed from the atmosphere in the vital process. The substance of the brain and nerves contains a large quantity of albumen, besides two peculiar fatty acids, one of which contains nitrogen. Water and common fat are those ingredients of the body which are destitute of nitrogen. Both are unorganized. The inorganic constituents of the body are, iron, lime, magnesia, common salt, and the alkalies. The nutritive process in the carnivora is seen in its simplest form. These animals live on the blood and flesh of the graminivora whose blood and flesh is identical with their own. The nutriment of the carnivorous animals is derived originally from blood; in their stomach it becomes dissolved, and capable of reaching all other parts of the body: in its passage it is again converted into blood, from which blood are reproduced all those parts of their organization, which have undergone change. Thus then, in a chemical sense, a carnivorous animal may be said to consume itself; as that which serves for its nutrition is identical with those parts of its organization which are to be renewed. The professor then inquires from what substances is the blood formed by means of which the organs of the graminivorous animals are developed? The digestive organs in those are less simple and their food consists of vegetables, the great mass of which contains but little nitrogen. The nitrogenized compounds of vegetables forming the food of graminivorous animals are called vegetable fibrine, vegetable albumen, and vegetable caseine. Now analysis has shown, that y are exactly of the same composition in 100 parts; and, what is still e extraordinary, they are absolutely identical with the chief constituents of the blood—animal fibrine, and animal albumen—they all three

dissolve in concentrated muriatic acid with the same deep purple colour, and even in their physical characters there is no difference between animal fibrine and albumen and vegetable fibrine and albumen. By identity, be it remarked, we do not here mean similarity, but an absolute identity, even as far as their organic constituents are concerned. These discoveries admirably exhibit the beauty and simplicity of nutrition in animals. Those vegetable principles which in animals are used to form blood, contain the chief constituents of blood, fibrine and albumen, ready formed, as far as regards their composition. All plants besides contain iron which re-appears in the colouring matter of the blood. Vegetables produce in their organism the blood of all animals; for the carnivora, in consuming the blood and flesh of the graminivora, consume, strictly speaking, only the vegetable principles, which have served for the nutrition of the latter. From all this it follows that the development of the animal organism and its growth are dependant on the reception of certain principles identical with the chief constituents of blood. The animal organism is a higher kind of vegetable, the development of which begins with those substances, with the production of which the life of an ordinary vegetable ends. A very important question still remains to be solved, namely, that of the function performed in the animal system by substances containing no nitrogen, such as sugar, starch, gum, &c. without which the graminivora cannot live; as their food must contain a certain amount of them, and if these compounds are not supplied, death quickly ensues. By a train of peculiarly ingenious reasoning the professor shows that all these substances contain a great excess of carbon, or of carbon and hydrogen, which excess is expended in the production of animal heat, and serves to preserve the organism from the action of atmospheric oxygen.

Some ingenious views are next presented on the uses of the bile in the animal economy. According to many physiologists the bile is only intended for excretion. But quantitative physiology must at once reject the opinion that the bile serves no purpose in the economy, and is incapable of further change.

No part of any organized structure contains soda: it is only met with in the serum of the blood, in the fat of the brain and in the bile. When the compounds of soda in the blood are converted into muscular fibre, membrane, or cellular tissue, the soda they contain must enter into new combinations. The blood which is transformed into organized tissue gives up its soda to the compounds formed by the metamorphoses of the previously existing tissues. In the bile we find one of these compounds of soda. Were the bile intended merely for excretion, we should find it, more or less altered, and also the soda it contains in the solid excrements. But such is not the case—the soda of the bile must therefore, at all events have returned from the intestinal canal into the organism, and the same must be true of the organic matters combined with it. During the digestive process, therefore, the soda of the bile, and along with it all the soluble parts of that fluid, are returned into the circulation. This soda re-appears in the newly-formed blood, and finally, we find it in the urine in the form of phosphate, carbonate and hippurate of soda.

It cannot be disputed that in an adult carnivorous animal which neither gains nor loses weight perceptibly from day to day, its nourishment, the

waste of organized tissue, and its consumption of oxygen stand to each other in a well-defined and fixed ratio. The carbon of the carbonic acid given off, with that of the urine; the nitrogen of the urine, and the hydrogen given off as ammonia and water; these elements, taken together must be exactly equal in weight to the carbon, nitrogen, and hydrogen of the metamorphosed tissues, and since these last are exactly replaced by the food, to the carbon, nitrogen, and hydrogen of the food. In the young of the carnivora the weight increases perceptibly from day to day. This fact pre-supposes that the assimilative process in the young animal is more energetic than the process of transformation in the tissues. Now it is well known that the number of respirations, and consequently the consumption of oxygen is greater in the young than in the adult animal. But since the metamorphosis of organized parts goes on more slowly, there would ensue a deficiency of those substances, the carbon and hydrogen of which are adapted for combination with oxygen. This carbon and hydrogen however, infinite wisdom has supplied to the young animal in its natural food. The carbon and hydrogen of butter, and the carbon of the sugar of milk, no part of which can yield blood, are destined for the support of the respiratory process, at an age when a greater resistance is opposed to the metamorphosis of existing organisms. The butter and sugar of milk are given out in the form of carbonic acid and water, and their conversion into oxidized products furnishes the clearest proofs that far more oxygen is absorbed than is required to convert the carbon and hydrogen of the metamorphosed tissues into carbonic acid and water.

Our author next adverts to the substances which form the principal part of the food of the graminivora. These are found to contain a large proportion of starch, cane sugar, gum, sugar of milk and grape sugar; the great similarity of composition in these different substances, which perform so important a part in the nutritive process of the graminivora, is very striking. For the same number of equivalents of carbon, starch contains 10 equivalents, cane-sugar and gum 11 equivalents, sugar of milk 12 equivalents, and grape sugar 14 equivalents of water, or the elements of water. In these different substances, some of which is never wanting in the food of the graminivora, there is added to the nitrogenized constituents of this food from which the blood is formed a certain excess of carbon, which the organism cannot employ to produce fibrine or albumen, as the nitrogenized constituents of the food already yield sufficient carbon for that purpose; but the function which these substances [sugar, gum, &c.] perform in the vital process of the graminivora will at once appear evident if we only take into account the small quantity of carbon which these animals consume in the nitrogenized constituents of their food, a quantity which bears no proportion to the large amount of oxygen absorbed through the skin and lungs. The professor shows that in the nitrogenized constituents of the quantity of food necessary for a horse daily there are contained only about  $14\frac{1}{2}$  oz. of carbon for the support of respiration, whereas from the immense quantity of oxygen which this animal takes in, 79 oz. of carbon is the quantity required for daily consumption, this deficiency is added to his food in various forms, as starch, sugar, &c. with which the

animal must be supplied, or his organism will be destroyed by the action of the oxygen.

A nation of hunters, restricted to a limited extent of land, would find itself totally unable to increase its population beyond a certain point. The extent of land being limited, the number of animals which it can maintain must be so too, but it is from these the carbon necessary for respiration is to be obtained. Now these animals collect from plants the constituents of their organs and of their blood, and then yield them to the savages who live by the chase alone. They again receive this food, unaccompanied by those non-nitrogenized principles, which contain so much carbon, and which during the life of the animal served to support the respiratory process. In such men confined to animal diet it is the carbon of the flesh and blood, which must take the place of the starch and sugar. Now 15lbs. of flesh contain not more carbon than 4lbs. of starch, and while the savage with one animal and an equal weight of starch could sustain life for a certain number of days, he would be obliged, if restricted to flesh, to consume five such animals, in order to procure the carbon necessary for respiration during the same time. These considerations point out to us the close connexion between agriculture and the multiplication of the human species. The object of agriculture is to produce a maximum of those substances necessary for assimilation and respiration, in the smallest possible space. Grain and other vegetables yield us not only in starch, sugar and gum the carbon so necessary for respiration and the production of animal heat, but also vegetable albumen, fibrine, and caseine, which go to the formation of blood, whence the other parts of our body are developed. We see the laborious exertions, and the great amount of muscular exercise which the savage confined to animal food takes—this he is compelled to do, for the purpose of accelerating the waste of the organized tissues by incessant motion, in order to furnish the matter necessary for respiration. From the difference in the constituents of the urine in the carnivora and graminivora our author shows that the process of metamorphosis in the tissues is different in the two classes, both in form and rapidity. The urine of the carnivora is acid, and contains alkaline bases with uric, phosphoric and sulphuric acids; whilst the urine of the graminivora is alkaline, containing an abundance of alkaline carbonates, and a very minute portion of alkaline phosphates. From this latter circumstance, namely, the very minute quantity of the alkaline phosphates, the professor infers the great slowness with which the tissues in the graminivora are metamorphosed. He states that the phosphates resulting from the change of the tissues re-enter the circulation for the purpose of forming brain and nervous matter, and also the earthy parts of the bones, the organs of excretion not separating these salts from the blood, as in the carnivora.

Our author next considers the relative capacity for increase of mass, and the relative assimilative power in the graminivora and carnivora, and points out a striking difference in both. Carnivorous animals require less food for their mere support, because their skin is destitute of perspiratory pores, and because they lose, for equal bulks, much less heat than graminivorous animals. A spider is observed to suck the blood of the first fly with great voracity, but is not excited by a second: a cat will kill one or perhaps two mice and eat them, but even if she kill a third, she will not



eat it. A cow or sheep, in the meadow, eats almost uninterruptedly. Their system possesses the power of converting into organized tissues all the food they devour beyond the quantity required for merely supplying the waste of their bodies. All the excess of blood produced is converted into cellular and muscular tissue; the graminivorous animal becomes fleshy and plump, while the flesh of the carnivorous animal is always tough and sinewy. When the stag, roe-deer or hare, animals which live on the same food as cattle or deer, are well supplied with food, their increase in size will depend on the quantity of vegetable albumen, &c. which they consume. If they take sufficient exercise, enough of oxygen is absorbed to consume the carbon of the gum, sugar, starch, and of all similar constituents of the food. But in the case of domestic or stall-fed animals, more food in the shape of nitrogenized compounds is devoured than is required for reproduction; and at the same time more non-nitrogenized substances are eaten, than is necessary to support respiration and keep up animal heat. From want of exercise these animals absorb much less of oxygen than is required to consume all the carbon; the surplus is employed in forming *fat*. Thus then the formation of fat in the animal body results from a want of due proportion between the food taken into the stomach and the oxygen absorbed by the lungs and skin. From all that precedes we may safely infer that there is a close connexion between non-nitrogenized food, such as starch, gum, sugar, &c. and the production of fat. On comparing the composition of sugar of milk, of starch, and of the other varieties of sugar with that of mutton and beef suet and human fat we find they all agree in the proportion of carbon and hydrogen being the same, and that they differ only in that of oxygen. By comparing the formulæ of starch and of fat, it would appear that the former may pass into the latter by a mere separation of a part of its oxygen. Now it being certain that the herbs and roots consumed by the cow contain no butter; that the hay and other fodder of oxen contains no beef-suet, it must be admitted that the fat found in the bodies of these animals is formed in their organism; whence we may be warranted in concluding that a certain quantity of oxygen, in some form or other, separates from the constituents of their food. The chemical analysis of the constituents of the food of the graminivora shows that they contain carbon and oxygen in certain proportions; which, when reduced to equivalents, yield the following series:—

In vegetable fibrine, albumen, and caseine there are contained for	120	equiv. carbon	36	equiv. oxygen,
In starch . . . . .	120	"	100	"
In cane sugar . . . . .	120	"	110	"
In gum . . . . .	120	"	110	"
In sugar of milk . . . . .	120	"	120	"
In grape sugar . . . . .	120	"	140	"

Now in all fatty bodies, there are contained, on an average—for 120 equiv. carbon only 10 equiv. oxygen.

Since the carbon of the fatty constituents of the animal body is derived from the food, it is clear, if we suppose fat to be formed from albumen, fibrine, or caseine, that for every 120 equivalents of carbon deposited as fat, 26 equivalents of oxygen must be separated from the elements of

these substances; and, further, if we conceive fat to be formed from starch, sugar, or sugar of milk, there must be separated 90, 100, and 110 equivalents of oxygen from these compounds respectively. Accordingly there is but one way in which the formation of fat in the animal body is possible, and that is precisely the way in which it takes place in plants; it is a separation of oxygen from the elements of the food.

The deposition of fat in the animal body is considered by our author as an abnormal condition, depending on the disproportion between the quantity of carbon in the food and that of oxygen absorbed by the skin and lungs; this deposition is a consequence of a deficient supply of oxygen; oxygen being absolutely indispensable for the dissipation of the excess of carbon. This deposition is never seen in wild animals in a state of nature; neither is it seen in the Bedouin or in the Arab of the desert, who exhibits with pride to the traveller his lean, muscular, sinewy limbs, entirely free from fat; but in prisons and jails, it appears as a puffiness in the inmates, fed, as they are, on a poor and scanty diet. Now though the formation of fat depends on a deficiency of oxygen, still in this process a new source of oxygen is opened and a new cause of animal heat; for the oxygen set free in the formation of fat is given out in combination with carbon and hydrogen in the form of carbonic acid and water, by which heat is generated. Thus, in the formation of fat, the vital force possesses a means of counteracting a deficiency in the supply of oxygen, and consequently in that of the heat indispensable for the vital process.

In some diseases the starch, sugar, &c. of the food do not undergo the changes which enable them to assist respiration, and consequently to be converted into fat. Thus, in diabetes mellitus, the starch is only converted into grape sugar, which is expelled from the body without further change. In other diseases, as in inflammation of the liver, we find the blood loaded with fat and oil; and in the composition of the bile there is nothing inconsistent with the supposition that some of its constituents may be formed into fat.

From the preceding observations it appears that the substances constituting the food of man may be divided into two classes: into *nitrogenized* and *non-nitrogenized*. The former are capable of being converted into blood, whilst the latter are not so. Out of those substances which are adapted to the formation of blood are formed all the organised tissues. The other class of substances, in the normal state of health, serve to support the process of respiration. The former our author calls the *plastic elements of nutrition*; the latter, *elements of respiration*.

Among the former we reckon vegetable fibrine, vegetable albumen, vegetable caseine, animal flesh and animal blood: among the latter are, fat, starch, gum, cane sugar, grape sugar, sugar of milk, pectine, bassorine, wine, beer, spirits. The nitrogenized constituents of vegetable food have a composition identical with that of the constituents of the blood. No nitrogenized compound, whose composition differs from that of fibrine, albumen, and caseine, is capable of sustaining the vital process in animals. The animal organism unquestionably possesses the power of forming, from the constituents of its blood, the substance of its membranes and cellular tissue, of its nerves and brain, &c. But the blood must be sup-

plied to it ready formed in its chemical composition—otherwise a period is soon put to the formation of blood and consequently to life. This explains to us how it happens that the tissues yielding gelatine, are not adapted for the support of the vital process; for their composition is different from that of fibrine or albumen. That is, those parts of the animal organism which form the blood do not possess the power of effecting a transformation in the arrangements of the elements of gelatine, or of the tissues containing it. While in the body of a starving or sick individual, the fat disappears, and the muscular tissue returns to the form of blood, we find the tendons and membranes retain their natural condition. When we consider the transformation of the albumen of the blood into a part of an organ composed of fibrine, the identity of composition in the two substances renders the change easily conceivable. Hence, some physiologists have supposed, not without some reason, that gelatine, when taken in the dissolved state, is again converted in the body, into cellular tissue, membrane and cartilage, that it may serve for the production of such parts of those tissues as have been wasted, and also for their growth. And when the powers of nutrition in the whole body are affected by a change of the health, then, even should the power of forming blood remain the same, the organic force by which the constituents of the blood are changed into cellular tissue and membrane, must be enfeebled by sickness. In the sick man the power to produce the necessary metamorphosis must be impaired as well in the stomach, as in all other parts. In this state experience shows that gelatinous matters in a dissolved state exercise a decided influence on the health. Given in a form adapted for assimilation, they serve to husband the vital force, just as may be done in the case of the stomach, by a judicious preparation of the food.

In the SECOND PART of his work, the subject of which is the *Metamorphosis of Tissues*, Professor Liebig examines in detail the several chemical processes engaged in the formation of bile, of urea, uric acid and its compounds, as also of the cerebral and nervous substance. Previously, however, to entering on these matters, he makes some preparatory remarks on the ultimate organic elements of certain substances, closely connected with his subject. He states, that recent experiment has demonstrated the existence of numerous compounds, both nitrogenised and non-nitrogenised, which, with the greatest diversity in external characters, possess the same composition in 100 parts, many of them containing the same absolute amount of equivalents of each element. Such compounds are designated *isomeric* and *polymeric*.

As an instance, he adduces the absolute identity of composition in the chief constituents of blood and the nitrogenised compounds in vegetable food. Albumen, fibrine and caseine, though differing in external characters, contain exactly the same proportion of organic elements. When animal albumen, fibrine, and caseine are dissolved in the moderately strong solution of caustic potash, and the solution is exposed for some time to a high temperature, these substances are decomposed. The addition of acetic acid to the solution causes, in all three, the separation of a gelatinous translucent precipitate, which has exactly the same character and composition, from whichever of the three substances above mentioned it has been obtained. This compound has been found by Mulder to contain the

same organic elements, and exactly the same proportion as the animal matters from which it is prepared. Hence the chief constituents of the blood and the caseine of milk may be considered as compounds of phosphates and other salts, and of sulphur and phosphorus, with a compound of carbon, nitrogen, hydrogen, and oxygen, in which the relative proportion of these elements is invariable; and this compound may be considered as the commencement and starting point of all other animal tissues, because these are all produced from the blood. To this product of the decomposition of albumen, fibrine, &c. by potash, the name of *proteine* has been given, (πρωτεῖν to hold the first place). The blood, or its constituents, are compounds of this *proteine*, with various proportions of inorganic substances. It has been ascertained by experiment that vegetable albumen, fibrine, and caseine are acted on by potash in the same way as animal albumen, fibrine, &c. Hence, then, it may be laid down as a law, founded on experience, that vegetables produce, in their organism, compounds of *proteine*; and that out of these compounds the various tissues and parts of the animal body are developed by the vital force with the aid of the oxygen of the atmosphere, and of the elements of water. The proposition, that all the organic nitrogenized constituents of the body, how different soever they may be in composition, are derived from *proteine*, being formed from it by the addition or subtraction of the elements of water or oxygen, the author illustrates very happily by referring to the development of the young animal in the egg. The egg contains no other nitrogenized compound except albumen—the albumen of the yolk is identical with that of the white. Yet we see in the process of incubation during which nothing but the oxygen of the air is introduced, that out of the albumen feathers, claws, globules of the blood, fibrine, membrane and cellular tissue, arteries and veins are produced. Consequently the true starting point for all the tissues is albumen, into which all nitrogenised articles of food, whether of an animal or vegetable nature, must be converted, before they can take part in the process of nutrition.

Our author now comes to the function or process of digestion, which he considers to be totally independent of the vital force, and to take place in virtue of a purely chemical action, similar to those processes of decomposition, called putrefaction, fermentation, or decay. To understand this part of our author's work, it will be necessary to take his account of the nature of fermentation or putrefaction; he describes it to be a process of transformation—that is, a new arrangement of the elementary particles or atoms, of a compound, yielding two or more new groups or compounds, and caused by contact with other substances, the elementary particles of which are themselves in a state of transformation or decomposition. It is a communication, or an imparting of a state of motion, which the atoms of a body in a state of motion are capable of producing in other bodies whose elementary particles are held together only by a feeble attraction. Thus the clear gastric juice contains a substance in a state of transformation, by the contact of which with those constituents of the food, which, by themselves, are insoluble in water, the latter acquire, in virtue of a new grouping of their atoms, the property of dissolving in that fluid. During digestion, the gastric juice, when separated, is

- found to contain a free mineral acid, the presence of which checks all further change. There cannot be a doubt that the substance present in the gastric juice in a state of change is a product of the transformation of the stomach itself. It is known that no substances possess, in so high a degree as those arising from the progressive decomposition of the tissues containing gelatine or chondrine, the property of exciting a change in the arrangement of the elements of other compounds. When the lining membrane of the stomach of any animal, as that of the calf, is cleared by continued washing with water, it produces no effect, when brought into contact with a solution of sugar, with milk, or other substances. But if the same membrane be exposed for some time to the air, or dried, and then placed in contact with such substances, the sugar is changed, according to the state of decomposition of the animal matter, either into lactic acid, into mannite, and mucilage, or into alcohol and carbonic acid; while milk is instantly coagulated. Thus, as in the germination of seeds, the presence of a body in a state of decomposition, or transformation, which has been called *diastase*, effects the solution of the starch—that is, its conversion into sugar; so a product of the metamorphosis of the substance of the stomach, being itself in a state of metamorphosis which is completed in the stomach, effects the solution of all such parts as are capable of assuming a soluble form. Our author here contradicts the opinion entertained by several physiologists, namely, that lactic acid is formed during digestion, and hence that this acid is necessary for the completion of this process. The presence of free muriatic acid in the gastric juice, first noticed by Prout, has been confirmed by all those chemists, who have since examined that fluid. In the action of the gastric juice on the food, no other element takes a share, except the oxygen of the atmosphere, and the elements of water. This oxygen is introduced directly into the stomach in the saliva which possesses the remarkable property of enclosing air in the shape of froth, in a far higher degree than even soap-suds. This air, by means of the saliva, reaches the stomach with the food, and there its oxygen enters into combination, while its nitrogen is given out through the skin and lungs. Rumination, in certain graminivorous animals, has for its object a renewed and repeated introduction of oxygen.

The fact that nitrogen is given out by the skin and lungs, is explained by the property which animal membranes possess of allowing all gases to permeate them. Thus a bladder filled with carbonic acid, nitrogen, or hydrogen gas, if tightly closed and suspended in the air, loses in 24 hours the whole of the enclosed gas; by a kind of exchange it passes out into the atmosphere, while its place is occupied by the atmospherical air. This permeability to gases is a mechanical property common to all animal tissues; and it is found in the same degree in the living as in the dead tissue. As an additional instance that gases possess the property of permeating animal tissues, our author adduces the fatal accidents which so frequently occur in wine countries from the drinking of what is called *feather-white wine*. This poisonous wine is still in a state of fermentation, which is increased by the heat of the stomach. The carbonic acid gas which is disengaged penetrates through the parietes of the stomach, through the diaphragm, and through all the intervening membranes, into

the air-cells of the lungs, out of which it displaces the atmospheric air. The patient dies with all the symptoms of asphyxia caused by an irrespirable gas; and the surest proof of the presence of the carbonic acid in the lungs is the fact, that the inhalation of ammonia is recognised as the best antidote against this kind of poisoning.

Just as muscular fibre, when separated from the body, communicates the state of decomposition existing in its elements to the peroxide of hydrogen, so a certain product, arising by means of the vital process, and in consequence of the transposition of the elements of parts of the stomach, and of the other digestive organs, while its own metamorphosis is accomplished in the stomach, acts on the food. The insoluble matters become soluble—they are digested.

As hard-boiled white of egg or fibrine, when rendered soluble by certain liquids, retain all their properties except the solid form without the slightest change, in the same manner, in the digestive process in the healthy state the food only undergoes a change in its state of cohesion, becoming fluid without any other change of properties.

A strong argument adduced by our author in favour of the analogy between digestion and fermentation or putrefaction, is, that all substances capable of arresting the latter processes in liquids, also arrest digestion, when taken into the stomach. The action of empyreumatic matters in coffee and tobacco-smoke, of creosote, of mercurials, &c. &c. deserves on this account peculiar attention with reference to dietetics.

. . . . . The formula  $C_{48} H_{36} N^6 O_{14}$  is that which most accurately expresses the composition of proteine, or the relative proportions of the organic elements in the blood, as ascertained by analysis. Albumen, fibrine, and caseine contain proteine; caseine contains, besides, sulphur, but no phosphorus; albumen and fibrine contain both these substances chemically combined—the former more sulphur than the latter. . . . .

If we reflect that from the albumen and fibrine of the body all the other tissues are derived, it is perfectly clear that this can only occur in two ways. Either certain elements have been added to, or removed from, their constituent parts. If we now look, for example, for an analytical expression of the composition of cellular tissue, of the tissues yielding gelatine of tendons, of hair, of horn, &c. in which the number of atoms of carbon is made invariably the same as in albumen and fibrine, we can then see, at the first glance, in what way the proportion of the other elements has been altered; but this includes all that physiology requires in order to obtain an insight into the true nature of the formative and nutritive processes in the animal body.

From the researches of Mulder and Scherer we obtain the following empirical formulæ: (P phosphorus—S sulphur.)

#### *Composition of Organic Tissues.*

Albumen	.	.	.	.	$C_{48} N^6 H_{36} O_{14} + P + S$
Fibrine	.	.	.	.	$C_{48} N^6 H_{36} O_{14} + P + 2S$
Caseine	.	.	.	.	$C_{48} N^6 H_{36} O_{14} + S$
Gelatinous tissues, tendons	.	.	.	.	$C_{48} N^{7.5} H_{41} O_{18}$
Chondrine	.	.	.	.	$C_{48} N^6 H_{40} O_{20}$

that of the ingredients of the blood. The chief ingredients of the blood, fibrine and albumen, contain in all seven chemical elements, among which nitrogen, phosphorus, and sulphur are found. They contain also the earth of bones. Chemical analysis has led to the remarkable result that fibrine and albumen contain the same organic elements united in the same proportion; the particles however constituting them are arranged in a different order; but in the ultimate proportion of the organic elements they are identical. Both albumen and fibrine, in the process of nutrition are capable of being converted into muscular fibre, and muscular fibre is capable of being re-converted into blood. If we now compare the composition of all organized parts with that of fibrine and albumen, the following relations present themselves:—All parts of the animal body which have a decided shape, which form parts of organs, contain nitrogen. No part of an organ which possesses motion and life, is destitute of nitrogen; all of them contain likewise carbon and the elements of water, the latter, however in no case in the proportion to form water. The chief ingredients of the blood contain nearly 17 per cent of nitrogen, and no part of an organ contains less than 17 per cent of nitrogen.

It has been proved that the animal body is incapable of producing an elementary body, such as carbon or nitrogen, out of substances which do not contain it; and it follows that all kinds of food fit for the production either of blood, or of cellular tissue, membranes, skin, hair, &c. must contain a certain amount of nitrogen, that element being essential to the composition of the above-named organs, because the organs cannot create it from the other elements presented to them; and finally, because no nitrogen is absorbed from the atmosphere in the vital process. The substance of the brain and nerves contains a large quantity of albumen, besides two peculiar fatty acids, one of which contains nitrogen. Water and common fat are those ingredients of the body which are destitute of nitrogen. Both are unorganized. The inorganic constituents of the body are, iron, lime, magnesia, common salt, and the alkalies. The nutritive process in the carnivora is seen in its simplest form. These animals live on the blood and flesh of the graminivora whose blood and flesh is identical with their own. The nutriment of the carnivorous animals is derived originally from blood; in their stomach it becomes dissolved, and capable of reaching all other parts of the body: in its passage it is again converted into blood, from which blood are reproduced all those parts of their organization, which have undergone change. Thus then, in a chemical sense, a carnivorous animal may be said to consume itself; as that which serves for its nutrition is identical with those parts of its organization which are to be renewed. The professor then inquires from what substances is the blood formed by means of which the organs of the graminivorous animals are developed? The digestive organs in those are less simple and their food consists of vegetables, the great mass of which contains but little nitrogen. The nitrogenized compounds of vegetables forming the food of graminivorous animals are called vegetable fibrine, vegetable albumen, and vegetable caseine. Now analysis has shown, that they are exactly of the same composition in 100 parts; and, what is still more extraordinary, they are absolutely identical with the chief constituents of the blood—animal fibrine, and animal albumen—they all three

dissolve in concentrated muriatic acid with the same deep purple colour, and even in their physical characters there is no difference between animal fibrine and albumen and vegetable fibrine and albumen. By identity, be it remarked, we do not here mean similarity, but an absolute identity, even as far as their organic constituents are concerned. These discoveries admirably exhibit the beauty and simplicity of nutrition in animals. Those vegetable principles which in animals are used to form blood, contain the chief constituents of blood, fibrine and albumen, ready formed, as far as regards their composition. All plants besides contain iron which re-appears in the colouring matter of the blood. Vegetables produce in their organism the blood of all animals; for the carnivora, in consuming the blood and flesh of the graminivora, consume, strictly speaking, only the vegetable principles, which have served for the nutrition of the latter. From all this it follows that the development of the animal organism and its growth are dependant on the reception of certain principles identical with the chief constituents of blood. The animal organism is a higher kind of vegetable, the development of which begins with those substances, with the production of which the life of an ordinary vegetable ends. A very important question still remains to be solved, namely, that of the function performed in the animal system by substances containing no nitrogen, such as sugar, starch, gum, &c. without which the graminivora cannot live; as their food must contain a certain amount of them, and if these compounds are not supplied, death quickly ensues. By a train of peculiarly ingenious reasoning the professor shows that all these substances contain a great excess of carbon, or of carbon and hydrogen, which excess is expended in the production of animal heat, and serves to preserve the organism from the action of atmospheric oxygen.

Some ingenious views are next presented on the uses of the bile in the animal economy. According to many physiologists the bile is only intended for excretion. But quantitative physiology must at once reject the opinion that the bile serves no purpose in the economy, and is incapable of further change.

No part of any organized structure contains soda: it is only met with in the serum of the blood, in the fat of the brain and in the bile. When the compounds of soda in the blood are converted into muscular fibre, membrane, or cellular tissue, the soda they contain must enter into new combinations. The blood which is transformed into organized tissue gives up its soda to the compounds formed by the metamorphoses of the previously existing tissues. In the bile we find one of these compounds of soda. Were the bile intended merely for excretion, we should find it, more or less altered, and also the soda it contains in the solid excrements. But such is not the case—the soda of the bile must therefore, at all events have returned from the intestinal canal into the organism, and the same must be true of the organic matters combined with it. During the digestive process, therefore, the soda of the bile, and along with it all the soluble parts of that fluid, are returned into the circulation. This soda re-appears in the newly-formed blood, and finally, we find it in the urine in the form of phosphate, carbonate and hippurate of soda.

It cannot be disputed that in an adult carnivorous animal which neither gains nor loses weight perceptibly from day to day, its nourishment, the



absorbed in respiration, and on the quantity of water consumed by different animals in a given time. When uric acid is subjected to the action of oxygen, it is first resolved into alloxan and urea. A new supply of oxygen acting on the alloxan causes it to resolve itself either into oxalic acid and urea, into oxaluric and parabonic acid, or into carbonic acid, and urea. In mulberry calculi we find oxalate of lime, in other calculi urate of ammonia, and always in persons, in whom, from want of exercise and labour, or from other causes, the supply of oxygen has been diminished. Calculi containing uric acid or oxalic acid are never found in phthical patients; and it is a common occurrence in France, among patients suffering from calculous complaints that when they go to the country, where they take more exercise, the compounds of uric acid, which were deposited in the bladder during their residence in town, are succeeded by oxalates (mulberry calculus) in consequence of the increased supply of oxygen. With a still greater supply of oxygen they would have yielded, in healthy subjects, only the last product of the oxidation of uric acid, namely carbonic acid and urea.

From the undoubted fact that all substances incapable of further use in the system are separated by the kidneys and expelled from the body in the urine, altered or unaltered, it has been erroneously inferred that the food, and especially nitrogenised food, may have a direct influence on the formation of urinary calculi—such an idea is unfounded. Boiled and roasted flesh is at once converted into blood; while the uric acid and urea are derived from the metamorphosed tissues. The quantity of the latter increases with the rapidity of transformation in a given time, but bears no proportion to the amount of food taken in the same time. In a starving man making much exertion more urea is secreted than in the most highly-fed individual in a state of rest. In fevers and during rapid emaciation the urine contains more urea than in the state of health. The uric acid in the urine of man disappears, when he receives through the skin and lungs a quantity of oxygen sufficient to oxidize the products of the transformation of the tissues. The use of wine and fat, which, when taken into the organism, undergo no other change but that of combining with oxygen, has a marked influence on the formation of uric acid. The urine, after the use of fat food, becomes turbid, and deposits minute crystals of uric acid. The same thing happens after the use of wines in which the alkali necessary to hold the uric acid in solution is wanting, but never from the use of Rhenish wines, which contain so much tartar. In animals which drink much water, by which the sparingly soluble uric acid is kept dissolved, so that the inspired oxygen can act on it, no uric acid is found in the urine, but only urea.

If to one atom of uric acid we add six atoms of oxygen and four atoms of water, it resolves itself into urea and carbonic acid. The urine of the herbivora contains no uric acid, but ammonia, urea, and hippuric or benzoic acid.

Professor Liebig next observes that if to the formula of proteine, multiplied by 3, we add the elements of 4 atoms of water, and if we deduct from the sum of all the elements half of the elements of choloidic acid, there remains a formula which expresses very nearly the composition of gelatine:—and if from this formula of gelatine the elements of 2 atoms

of proteine be subtracted, there remains the elements of urea, uric acid and water, or of three atoms of allantoine and three atoms of water. Assuming the correctness of this formula, it then appears that the elements of two atoms of proteine *plus* the nitrogenised products of the transformation of a third atom of proteine (uric acid and urea) and water; or three atoms of proteine, *minus* the elements of a compound containing no nitrogen, which actually occurs as one of the products of the transformation of chloric acid, yield in both cases a formula closely approaching the composition of gelatinous tissues: that is, in other words, gelatinous tissue may be produced by the addition, to the elements of proteine, of allantoine and water, or of water, urea and uric acid; or by the separation from the elements of proteine of a compound containing no nitrogen. No other constituent of the bile has as yet been taken into the calculation besides choleic acid; because it alone is known with certainty to contain nitrogen. Now if it be admitted that its nitrogen is derived from the metamorphosed tissues, it is probable that the carbon, and other elements which it contains, are derived from the same source.

The author here cautions us against supposing that the nitrogen of the food can pass into the urine as urea, without having previously become part of an organized tissue; the untenableness of such a supposition will at once appear, when we recollect that the albumen, from which such nitrogen should be derived, suffers no change in passing through the liver or kidneys; so that these organs cannot be adapted for the alteration or decomposition of the substance from which all the other organs of the body are to be formed.

To the question, what becomes in man of the compounds of proteine taken in excess, what change is undergone by the superabundant nitrogenised food? he answers, the blood-vessels become distended with excess of blood, the other vessels with excess of their fluids; and if the too great supply of food be kept up, and the blood or other fluids adapted for forming blood be not applied to their natural purposes, if the soluble matters be not taken up by the proper organs, various gases are disengaged, as in processes of putrefaction, the excrements assume an altered quality in colour, smell, &c. Now none of these effects should occur if the liver and kidneys were capable of effecting the resolution of the superabundant compounds of proteine into urea, uric acid, and bile. All the observations which have been made in reference to the influence of nitrogenised food on the composition of the urine have entirely failed to demonstrate the existence of any direct influence of the kind; the phenomena are capable of a much simpler interpretation, if, along with the food, we consider the mode of life and habits of the individuals who have been the subjects of investigation. Gravel and calculus occur in persons who use very little animal food. Concretions of uric acid have never been observed in carnivorous mammalia, living in the wild state, and among nations which live entirely on flesh, deposits of uric acid concretions in the limbs or in the bladder are utterly unknown. That which must be considered as undeniably true with respect to the origin of bile in the carnivora, cannot hold in regard to all the constituents of the bile secreted by the liver in the herbivora: for with the enormous quantity of bile produced, for instance, by the liver of an ox, it is absolutely impossible to suppose that all

its carbon is derived from the metamorphosed tissues. Hence it follows that other substances, besides compounds of proteine, must inevitably take part in forming bile in the herbivora; and these substances can only be the non-nitrogenised constituents of their food.

The consideration of the quantitative proportion of the bile secreted in the herbivora leads to the following conclusions:—

The chief constituents of the bile of the herbivora contain nitrogen, and this nitrogen is derived from compounds of proteine. The bile of this class of animals contains more carbon than corresponds to the quantity of nitrogenised food taken, or to the portion of tissue that has undergone metamorphosis in the vital process. A part of this carbon must, therefore, be derived from the non-nitrogenised parts of the food (starch, sugar, &c.); and in order to be converted into a nitrogenised constituent of bile, a part of these bodies must have combined with a nitrogenised compound derived from a compound of proteine. With respect to this conclusion it is quite indifferent whether that compound of proteine be derived from the food or from the tissues of the body.

The comparison of the amount of carbon in the bile secreted by an herbivorous animal, with the quantity of carbon of its tissues, or of the nitrogenised constituents of its food, which in consequence of the constant transformations may pass into bile, indicates a very striking difference. The carbon of the bile secreted amounts, at least, to more than five times the quantity of that which could reach the liver in consequence of the change of matter in the body, either from the metamorphosed tissues or from the nitrogenised constituents of the food; and we may regard as well-founded the supposition that the non-azotised constituents of the food take a decided share in the production of bile in the herbivora; for neither experience nor observation contradicts the opinion.

Chemical analysis and the study of the living animal body mutually support each other; and both lead to the conclusion that a certain portion of the carbon of the non-azotised constituents of food (of starch, &c., the elements of respiration) is secreted by the liver in the form of bile; and further, that the nitrogenised products of the transformation of tissues in the herbivora do not, as in the carnivora, reach the kidneys immediately or directly, but that, before their expulsion from the body in the form of urine, they take a share in certain other processes, especially in the formation of bile. They are conveyed to the liver with the non-azotised constituents of the food; they are returned to the circulation in the form of bile, and are not expelled by the kidneys till they have thus served for the production of the most important of the substances employed in respiration.

When the urine is left to itself, the urea which it contains is converted into carbonate of ammonia; the elements of urea are in such proportion that, by the addition of the elements of water, all its carbon is converted into carbonic acid, and all its nitrogen into ammonia. \* \* \* \* \*

The presence of free muriatic acid in the stomach, and that of soda in the blood, prove beyond all doubt the necessity of common salt for the anic processes; but the quantities of soda required by animals of different classes, to support the vital processes, are singularly unequal. If we suppose that a given amount of blood, considered as a compound of

soda, passes in the body of a carnivorous animal, in consequence of the change of matter, into a new compound of soda, namely, the bile, we must assume that, in the normal condition of health, the proportion of soda in the blood is amply sufficient to form bile with the products of transformation. The soda which has been used in the vital processes, and any excess of soda, must be expelled in the form of a salt, after being separated from the blood by the kidneys.

Now if it be true, that, in the body of an herbivorous animal, a much larger quantity of bile is produced than corresponds to the amount of blood formed or transformed in the vital processes; if the greater part of the bile, in this case, proceeds from the non-azotised constituents of the food, then the soda of the blood which has been formed into organised tissue (assimilated or metamorphosed) cannot possibly suffice for the daily secretion of bile. The soda, therefore, of the bile of the herbivora must be supplied directly in the food; their organism must possess the power of applying directly to the formation of bile all the compounds of soda present in the food, and decomposable by the organic process. All the soda of the animal body obviously proceeds from the food; but the food of the carnivora contains, at most, only the amount of soda necessary to the formation of blood; and, in most cases, among animals of this class, we may assume that only as much soda as corresponds to the proportion employed to form the blood is expelled in the urine.

When the carnivora obtain in their food as much soda as suffices for the production of their blood, an equal amount is excreted in the urine; when the food contains less, a part of that which would otherwise be excreted is retained by the organism. All these statements are most unequivocally confirmed by the composition of the urine in these different classes of animals. As the ultimate product of the changes of all compounds of soda in the animal body, we find in the urine the soda in the form of a salt, and the nitrogen in that of ammonia or urea. The soda in the urine of the carnivora is found in combination with sulphuric and phosphoric acids; and along with the sulphate and phosphate of soda we never fail to find a certain quantity of a salt of ammonia, either muriate or phosphate of ammonia. There can be no more decisive evidence in favour of the opinion, that the soda of their bile or of the metamorphosed constituents of their blood is very far from sufficing to neutralize the acids which are separated, than the presence of ammonia in their urine. This urine, moreover, has an acid reaction. In contradistinction to this, we find, in the urine of the herbivora, soda in predominating quantity, and that not combined with sulphuric or phosphoric acids, but with carbonic, benzoic, or hippuric acids. These well-established facts demonstrate that the herbivora consume a far larger quantity of soda than is required merely for the supply of the daily consumption of blood. In their food are united all the conditions for the production of a second compound of soda, destined for the support of the respiratory process; and it can only be a very limited knowledge of the vast wisdom displayed in the arrangements of organized nature which can look on the presence of so much soda in the food and in the urine of the herbivora as accidental.

It cannot be accidental that the life, the development of a plant, is dependent on the presence of the alkalies which it extracts from the soil:

This plant serves as food to an extensive class of animals, and in these animals the vital process is again most closely connected with the presence of these alkalies. We find the alkalies in the bile, and their presence in the animal body, is the indispensable condition for the production of the first food of the young animal; for without an abundant supply of potash, the production of milk becomes impossible.

All observation leads, as appears from the preceding exposition, to the opinion, that certain non-azotised constituents of the food of the herbivora (starch, sugar, gum, &c.) acquire the form of a compound of soda, which in their bodies serves for the same purpose as that which we know certainly to be served by the bile (the most highly-carbonized product of the transformation of their tissues) in the bodies of the carnivora. These substances are employed to support certain vital actions, and are finally consumed in the generation of animal heat, and in furnishing means of resistance to the action of the atmosphere. In the carnivora the rapid transformation of their tissues is a condition of their existence, because it is only as the result of the change of matter in the body that these substances can be formed, which are destined to enter into combination with the oxygen of the air; and in this sense we may say that the non-azotised constituents of the food of the herbivora impede the change of matter, or retard it, and render unnecessary, at all events, so rapid a process as occurs in the carnivora.

The quantity of azotised matter, proportionally so small, which the herbivora require to support their vital functions, is closely connected with the power possessed by the non-azotised parts of their food to act as means of supporting the respiratory process; and this consideration seems to render it not improbable, that the necessity for more complex organs of digestion in the herbivora is rather owing to the difficulty of rendering soluble and available for the vital processes certain non-azotised compounds (gum? amylaceous fibre?) than to any thing in the change or transformation of vegetable fibrine, albumen, and caseine into blood; since, for this latter purpose, the less complex digestive apparatus of the carnivora is amply sufficient.

If in man, when fed on a mixed diet, starch performs a similar part to that which it plays in the body of the herbivora; if it be assumed that the elements of starch are equally necessary to the formation of the bile in man as in those animals; then it follows that a part of the azotised products of the transformation of the tissues in the human body, before they are expelled through the bladder, returns into the circulation from the liver in the shape of bile, and is separated by the kidneys from the blood, as the ultimate product of the respiratory process.

When there is a deficiency of non-azotised matter in the food of man, this form of the production of bile is rendered impossible. In that case the secretions must possess a different composition; and the appearance of uric acid in the urine, the deposition of uric acid in the joints and in the bladder, as well as the influence which an excess of animal food (which must be considered equivalent to a deficiency of starch, &c.) exercises on the separation of uric acid in certain individuals, may be explained on this principle. If starch, sugar, &c. be deficient, then a part of the azotised compounds formed during the change of matter will either remain

in the situation where they have been formed, in which case they will not be sent from the liver into the circulation, and therefore will not undergo the final changes dependent on the action of oxygen; or they will be separated by the kidneys in some form different from the normal one.

We have here endeavoured to prove that the non-azotised constituents of food exercise a most decided influence on the nature and quality of the animal secretions. Whether this occur directly; whether, that is to say, their elements take a decided share in the act of transformation of tissues; or whether their share in that process be an indirect one, is a question probably capable of being resolved by careful and cautious experiment and observation. It is possible that the non-azotised constituents of food, after undergoing some change, are carried from the intestinal canal directly to the liver, and that they are converted into bile in this organ, where they meet with the products of the metamorphosed tissues, and subsequently complete their course through the circulation.

This opinion appears more probable, when we reflect that as yet no trace of starch or sugar has been detected in arterial blood, not even in animals which had been fed exclusively with these substances. We cannot ascribe to these substances, since they are wanting in arterial blood, any share in the nutritive process; and the occurrence of sugar in the urine of those affected with diabetes mellitus (which sugar, according to the best observations is derived from the food) coupled with its total absence in the blood of the same patients, obviously proves that starch and sugar are not, as such, taken into the circulation.

The writings of physiologists contain many proofs of the presence of certain constituents of the bile in the blood of man in the state of health, although their quantity can hardly be determined. Indeed, if we suppose  $8\frac{1}{2}$  lb. (58,000 grains) of blood to pass through the liver every minute, and if from this quantity of blood 2 drops of bile (3 grs. to the drop) are secreted, this would amount to  $\frac{1}{8600}$ th part of the weight of the blood, a proportion far too small to be quantitatively ascertained by analysis. The greater part of the bile in the body of the herbivora, and in that of man fed on mixed food, appears from the preceding considerations to be derived from the elements of the non-azotised food. But its formation is impossible without the presence of an azotised body, for the bile is a compound of nitrogen. All varieties of bile yet examined yield, when subjected to dry distillation, ammonia and other nitrogenised products. Taurine and ammonia may readily be extracted from ox-bile; and the only reason why we cannot positively prove that the same products may be obtained from the bile of other animals is this, that it is not easy to procure, in the case of many of these animals, a sufficient quantity of bile for the experiment.

Now whether the nitrogenised compound which unites with the elements of starch to form bile be derived from the food, or from the substance of the metamorphosed tissues, the conclusion that its presence is an essential condition for the secretion of bile cannot be considered doubtful. Since the herbivora obtain in their food only such nitrogenised compounds as are identical in composition with the constituents of their blood, it is at all events clear, that the nitrogenised compound which enters into the composition of bile is derived from a compound of proteine. It is either

formed in consequence of a change which the compounds of proteine in the food have undergone, or it is produced from the blood or from the substance of the tissues by the act of their metamorphosis. If the conclusion be accurate, that nitrogenised compounds, whether derived from the blood or from the food, take a decided share in the formation of the secretions, and particularly of the bile, then it is plain that the organism must possess the power of causing foreign matters, which are neither parts nor constituents of the organs in which vital activity resides, to serve for certain vital processes. All nitrogenised substances capable of being rendered soluble, without exception, when introduced into the organs of circulation or of digestion, must if their composition be adapted for such purposes, be employed by the organism in the same manner as the nitrogenised products which are formed in the act of metamorphosis of the tissues. We are acquainted with several substances, which exercise a most marked influence on the act of transformation as well as on the nutritive process, while their elements take no share in the resulting changes. These are uniformly substances the particles of which are in a certain state of motion or decomposition, which state is communicated to all such parts of the organism as are capable of undergoing a similar transformation. Medicinal and poisonous substances form a second and most extensive class of compounds the elements of which are capable of a direct or an indirect share in the processes of secretion and of transformation. These may be divided into three great orders: the first (including the metallic poisons) consists of substances which enter into chemical combination with certain parts or constituents of the body, while the vital force is insufficient to destroy the compounds thus formed. The second division, consisting of the essential oils, camphor, empyreumatic substances, and antiseptics, &c., possesses the property of impeding or retarding those kinds of transformation to which certain very complex organic molecules are liable; transformations which, when they take place out of the body, are usually designated by the names of fermentation and putrefaction.

The third division of medicinal substances is composed of bodies, the elements of which take a direct share in the changes going on in the animal body. When introduced into the system they augment the energy of the vital activity of one or more organs—they excite morbid phenomena in the healthy body. All of them produce a marked effect in a comparatively small dose, and many are poisonous when administered in larger quantity. None of the substances in this class can be said to take a decided share in the nutritive process or to be employed by the organism in the production of blood; partly because their composition is different from that of blood, and partly because the proportion in which they must be given, to exert their influence, is as nothing, compared with the mass of blood. These substances when taken into the circulation, alter, as is commonly said, the quality of the blood, and in order that they may pass from the stomach into the circulation with their entire efficacy, we must assume that their composition is not affected by the organic influence of the stomach. If insoluble when given, they are rendered soluble in that organ, but they are not decomposed; otherwise they would be incapable of exerting any influence on the blood.

The blood, in its normal state, possesses two qualities closely related to each other, although we may conceive one of them to be quite independent

of the other. The blood contains in the form of the globules, the carriers, as it were, of the oxygen which serves for the production of certain tissues, as well as for the generation of animal heat. The globules of the blood, by means of the property they possess of giving off the oxygen they have taken up in the lungs, without losing their peculiar character, determine generally the change of matter in the body. The second quality of the blood, namely, the property which it possesses of becoming part of an organised tissue, and its consequent adaptation to promote the formation and the growth of organs, as well as to the reproduction and supply of water in the tissues, is owing, chiefly, to the presence of dissolved fibrine and albumen. These two chief constituents which serve for nutrition and the reproduction of matter, in passing through the lungs are saturated with oxygen, or, at all events, absorb so much from the atmosphere as entirely to lose the power of extracting oxygen from the other substances present in the blood. We know for certain that the globules of the venous blood, when they come in contact with air in the lungs, change their colour, and that this change of colour is accompanied by an absorption of oxygen; and that all those constituents of the blood, which possess in any degree the power of combining with oxygen, absorb it in the lungs, and become saturated with it. Although in contact with these other compounds, the globules, when arterialised, retain their florid, red colour in the most minute ramifications of the arteries; and we observe them to change their colour, and to assume the dark red colour which characterises venous blood, only during their passage through the capillaries. From these facts we must conclude that the constituents of arterial blood are altogether destitute of the power to deprive the arterialized globules of the oxygen which they have absorbed from the air; and we can draw no other conclusion from the change of colour which occurs in the capillaries than that the arterialized globules, during their passage through the capillaries, return to the condition which characterised them in venous blood; that, consequently, they give up the oxygen absorbed in the lungs, and thus acquire the power of combining with that element afresh.

We find, therefore, an arterial blood, albumen, which, like all the other constituents of that fluid, has become saturated with oxygen in its passage through the lungs, and oxygen gas, which is conveyed to every particle in the body in chemical combination with the globules of the blood. As far as our observations extend (in the development of the chick during incubation) all the conditions seem to be here united which are necessary to the formation of every kind of tissue; while that portion of oxygen which is not consumed in the growth or reproduction of organs combines with the substance of the living parts, and produces, by its union with their elements, the act of transformation which we have called the change of matter. It is obvious that all compounds, of whatever kind, which are present in the capillaries, whether separated there or introduced by endosmosis or imbibition, if not altogether incapable of uniting with oxygen, must, when in contact with the arterialised globules, the carriers of oxygen, be affected exactly in the same way as the solids forming parts of living organs. These compounds or their elements will enter into combination with oxygen, and in this case there will either be no change



of matter, or that change will exhibit itself in another form, yielding products of a different kind. The conception then of a change in the two qualities of the blood above alluded to, by means of a foreign body contained in the blood, or introduced into the circulation (a medicinal agent), presupposes two kinds of operation. Assuming that the remedy cannot enter into any such chemical union with the constituents of the blood, as puts an end to the vital activity; assuming, further, that it is not in a condition of transformation capable of being communicated to the constituents of the blood or of the organs, and of continuing in them; assuming, lastly, that it is incapable, by its contact with the living parts, of putting a stop to the change of matter, the transformation of their elements; then, in order to discover the *modus operandi* of this class of medicinal agents, nothing is left but to conclude, that their elements take a share in the formation of certain constituents of the living body, or in the production of certain secretions.

The vital process of secretion, in so far as it is related to the chemical forces, has been subjected to examination in the preceding observations. In the carnivora, we have reason to believe, that without the addition of any foreign matter in the food, the bile, and the constituents of the urine are formed in those parts where the change of matter takes place. In other classes of animals, on the other hand, we may suppose that in the organ of secretion itself, the secreted fluid is produced from certain matters conveyed to it; in the herbivora, for example, the bile is formed from the elements of starch along with those of a nitrogenised product of the metamorphosis of the tissues. But this supposition by no means excludes the opinion, that in the carnivora the products of the metamorphosed tissues are resolved into bile, uric acid, or urea, only after reaching the secreting organ; nor the opinion that the elements of the non-azotised food, conveyed directly by the circulation to every part of the body, where change of matter is going on, may then unite with the elements of the metamorphosed tissues, to form the constituents of the bile and of the urine.

If we now assume that certain medicinal agents may become constituents of secretions, this can only occur in two ways. Either they enter the circulation, and take a direct share in the change of matter, in so far as their elements enter into the composition of the new products; or they are conveyed to the organs of secretion, where they exert an influence on the formation or on the quality of a secretion by the addition of their elements. In either case they must lose in the organism their chemical character; and we know with sufficient certainty that this class of medicinal bodies disappears in the body without leaving a trace. In fact, if we ascribe to them any effect, they cannot lose their peculiar character by the action of the stomach; their disappearance therefore presupposes that they have been applied to certain purposes, which cannot be imagined to occur without a change in their composition. Now, however limited may be our knowledge of the compositions of the different secretions, with the exception of the bile, this much is certain, that all the secretions contain nitrogen chemically combined. They pass into fetid putrefaction, and yield either in this change, or by dry distillation, ammoniacal products. Even the saliva, when acted on by caustic potash, disengages ammonia freely. —Medicinal agents may be divided into two classes, the nitrogenised

and the non-nitrogenised. The nitrogenised vegetable principles, whose composition differs from that of the proper nitrogenised elements of nutrition, also produced by a vegetable organism, are distinguished beyond all others, for their powerful action on the animal economy. The effects of these substances are singularly varied; from the mildest form of the action of aloes, to the most terrible poison, strychnia, we observe an endless variety of different actions. With the exception of three, all these substances produce disease in the healthy organism, and are poisonous in certain doses. Most of them are alkaline. No remedy, devoid of nitrogen, possesses a poisonous action in a similar dose. The medicinal or poisonous action of the nitrogenised vegetable principles has a fixed relation to their composition—it cannot be supposed to be independent of the nitrogen they contain, but is certainly not in direct proportion to the quantity of nitrogen. Solanine and picrotoxine, which contain least nitrogen, are powerful poisons. Quinine contains more nitrogen than morphia. Caffeine and theobromine, the most highly nitrogenised of all vegetable principles, are not poisonous. A nitrogenised body, which exerts, by means of its elements, an influence on the formation or on the quality of a secretion, must, in regard to its chemical character, be capable of taking the same share as the nitrogenised products of the animal body do in the formation of the bile; that is, it must play the same part as a product of the vital process. On the other hand, a non-azotised medicinal agent, in so far as its action affects the secretions, must be capable of performing in the animal body the same part as that which we have ascribed in the formation of bile, to the non-azotised elements of food.

Thus, if we suppose that the elements of hippuric and uric acids are derived from the substance of the organs in which vitality resides; that, as products of the transformation of these organs, they lose the vital character, without losing the capacity of undergoing changes under the influence of the inspired oxygen, or of the apparatus of secretion; we can hardly doubt that similar nitrogenised compounds, products of the vital process in plants, when introduced into the animal body, may be employed by the organism exactly in the same way as the nitrogenised products of the metamorphosis of the animal tissues themselves. If hippuric or uric acids, or any of their elements, can take a share, for example, in the formation and supply of bile, we must allow the same power to other analogous nitrogenised compounds.

We shall certainly never be able to discover how men were led to the use of the hot infusion of the leaves of a certain shrub (tea) or of a decoction of certain roasted seeds (coffee). Some cause there must be which would explain how the practice has become a necessary of life to whole nations. But it is surely still more remarkable, that the beneficial effects of both plants on the health must be ascribed to one and the same substance, the presence of which in two vegetables, belonging to different natural families, and the produce of different quarters of the globe, could hardly have presented itself to the boldest imagination. Yet recent researches have shown, in such a manner as to exclude all doubt, that caffeine, the peculiar principle of coffee, and theine, that of tea, are, in all respects, identical.

It is not less worthy of notice, that the American Indian, living entirely

on flesh, discovered for himself, in tobacco-smoke, a means of retarding the change of matter in the tissues of his body, and thereby of making hunger more endurable; and that he cannot withstand the action of brandy, which, acting as an element of respiration, puts a stop to the change of matter by performing the function which properly belongs to the products of the metamorphosed tissues. Tea and coffee were originally met with among nations whose diet is chiefly vegetable. Without entering minutely into the medicinal action of caffeine (theine), it cannot but appear a most striking fact, even if we were to deny its influence on the process of secretion, that this substance, with the addition of oxygen and the elements of water, can yield taurine, the nitrogenised compound peculiar to bile. A similar relation exists in the case of the peculiar principle of asparagus, and of althœa, asparagine; which also by the addition of oxygen and the elements of water, yields the elements of taurine. The addition of the elements of water and of a certain quantity of oxygen to the elements of theobromine, the characteristic principle of the cacao bean (*theobroma cacao*), yields the elements of taurine and urea, of taurine, carbonic acid and ammonia, or of taurine and uric acid. To see how the action of caffeine, asparagine, theobromine, &c., may be explained, we must call to mind that the chief constituent of the bile contains only 3·8 per cent. of nitrogen, of which only the half, or 1·9 per cent. belongs to the taurine. Bile contains, in its natural state, water and solid matter, in the proportion of 90 parts by weight of the former to 10 of the latter. If we suppose these 10 parts by weight of solid matter to be choleic acid, with 3·57 per cent. of nitrogen, then 100 parts of fresh bile will contain 0·171 parts of nitrogen in the shape of taurine. Now this quantity is contained in 0·6 parts of caffeine; or  $2\frac{8}{10}$ ths grains of caffeine can give to an ounce of bile the nitrogen it contains in the form of taurine. If an infusion of tea contain no more than the  $\frac{1}{10}$ th of a grain of caffeine, still if it contribute, in point of fact, to the formation of bile, the action, even of such a quantity, cannot be looked on as a nullity. Neither can it be denied that in the case of the excess of non-azotised food and a deficiency of motion, which is required to cause a change of matter in the tissues, and thus to yield the nitrogenised product, which enters into the composition of the bile; that in such a condition, the health may be benefited by the use of compounds which are capable of supplying the place of the nitrogenised product produced in the healthy state of the body, and essential to the production of an important element of respiration. In a chemical sense—and it is this alone which the preceding remarks are intended to show—caffeine or theine, asparagine and theobromine are, in virtue of their composition, better adapted to this purpose, than all other nitrogenised vegetable principles. The action of these substances, in ordinary circumstances, is not obvious, but it unquestionably exists. This part of our author's work is concluded by some ingenious observations on the theory of the action of the vegetable alkalies; the composition and origin of nervous matter; its relation to that of the vegetable alkalies, and the theory of the action of the latter. The extent to which we have carried our analysis, however, presents us from dwelling longer on this part of the work.

For a somewhat similar reason, we must decline introducing any of the

third part of this work, which treats of the abstruse laws of the phenomena of motion, and is entirely of a speculative character. We shall therefore proceed to the analysis of our author's treatises on the *Theory of Disease*, and the *Theory of Respiration*.

#### THEORY OF DISEASE.

Every substance or matter, every chemical or mechanical agency, which changes or disturbs the restoration of the equilibrium between the manifestations of the causes of waste and supply, in such a way as to add its action to the causes of waste, is called by our author a *cause of disease*. *Disease* occurs when the sum of vital force, which tends to neutralise all causes of disturbance (in other words, when the resistance offered by the vital force), is weaker than the acting cause of disturbance. Death is that condition where all resistance on the part of the vital force entirely ceases. To the observer, the action of a cause of disease exhibits itself in the disturbance of the proportions between waste and supply which is proper to each period of life. In medicine, every abnormal condition of supply or waste, in all parts or in a single part of the body, is called disease. It is evident that one and the same cause of disease will produce in the organism very different effects, according to the period of life; and that a certain amount of disturbance, which produces disease in the adult state, may be without influence in childhood or in old age. A cause of disease may, when it is added to the cause of waste in old age, produce death (annihilate all resistance on the part of the vital force); while in the adult state it may produce only a disproportion between supply and waste; and in infancy only an equilibrium between supply and waste.

A cause of disease which strengthens the causes of supply, either directly or indirectly, by weakening the action of the causes of waste, destroys, in the child and in the adult, the relative normal state of health; while in old age it merely brings the waste and supply into equilibrium.

A child, lightly clothed, can bear cooling by a low external temperature without injury to health; the force available for mechanical purposes and the temperature of its body increase with the change of matter which follows the cooling; while a high temperature, which impedes the change of matter, is followed by disease.

On the other hand, in hospital and charitable institutions in which old persons spend the last years of life, when the temperature of the dormitory, in Winter, falls even a few degrees below the usual point, we see that by this slight degree of cooling the death of the oldest and weakest is occasioned.

A deficiency of resistance, in a living part, to the causes of waste, is a deficiency of resistance to the action of the oxygen. When this resistance diminishes in a living part, the change of matter increases in an equal degree. Since the phenomena of motion in the animal body are dependant on the change of matter, the increase of the change of matter is followed by an increase of all the motions. According to the conducting power of the nerves, the available force is carried away by the nerves of involuntary motion alone, or by all the nerves together. Hence, if in

consequence of a diseased transformation of living tissues, a greater amount of force be generated than is required for the production of the normal motions, it is seen in an acceleration of all or some of the involuntary motions, as well as in a higher temperature of the diseased part. This condition is called *fever*. When a great excess of force is produced by change of matter, the force, since it can only be consumed by motion, extends itself to the apparatus of voluntary motion. This state is called a *febrile paroxysm*. From the acceleration of the circulation in fever, more arterial blood, and in consequence, more oxygen, is conveyed to the diseased part, as well as to all other parts; and, if the active force in the healthy parts continue uniform, the whole action of the excess of oxygen must be exerted on the diseased part alone.

Should there be formed in the diseased parts, in consequence of the change of matter, from the elements of the blood or of the tissue, new products, which the neighbouring parts cannot employ for their own vital functions;—should the surrounding parts, moreover, be unable to convey these products to other parts, where they may undergo transformation, then these new products will suffer, at the place of their formation, a process of decomposition analogous to fermentation or putrefaction. In some cases medicine removes these diseased conditions, by exciting in the vicinity of the diseased part, or in any convenient situation, an artificial diseased state [as by blisters, &c.]; thus diminishing, by means of artificial disturbance, the resistance offered to the external causes of change in these parts by the vital force. The physician succeeds in putting an end to the original diseased condition, when the disturbance artificially exerted exceeds in amount the diseased state to be overcome. The resistance offered by the vital force to the action of oxygen in the diseased part being feeble than in the healthy state, by artificially diminishing the resistance in another part, the chemical action is diminished in the diseased part, being directed to another part, where the physician has succeeded in producing a still more feeble resistance to the action of oxygen, [the change of matter].

Health and the restoration of the diseased tissue follow when we are able so far to weaken the disturbing action of oxygen, that it becomes inferior to the resistance of the vital force. In other cases, where artificial external disturbance produces no effect, other indirect methods are adopted to exalt the resistance offered by the vital force. The physician diminishes by blood-letting the number of the carriers of oxygen [the globules], and by this means the conditions of change of matter: he excludes from the food whatever is convertible into blood; he gives non-azotised food which supports the respiratory process, as well as fruit and vegetables, which contain the alkalies necessary for the secretions.

If by these means he succeeds in causing the vital force in the diseased part to overcome the chemical action, and that without arresting the functions of the other organs, health is restored. To this plan of cure there is a powerful ally for the diseased organ, viz. the vital force of the healthy parts. When blood is abstracted, the external causes of change are diminished in them, and so their vital force obtains the predominance—the sum of all resisting powers, in the system, taken together, increases in

proportion as the amount of oxygen acting on them in the blood is diminished.

The vital force, in all its manifestations, behaves itself, like all other natural forces; it is devoid of consciousness or volition, and is subject to the action of a blister. According to the author's theory, the body may be compared to a self-regulating steam-engine with respect to the production of heat and of force. With the lowering of the external temperature the respirations become deeper and more frequent; oxygen is supplied in greater quantity; the change of matter is increased, and more food must be supplied, if the temperature of the body is to remain unchanged.

From the theory of disease here proposed it follows that a diseased condition once established, in any part of the body, cannot be made to disappear by the chemical action of a remedy. A limit may be put by a remedy to an abnormal process of transformation: that process may be accelerated or retarded; but this alone does not restore the healthy condition. The art of the physician consists in the knowledge of the means which enable him to exercise an influence on the *duration* of the disease; and in the removal of all disturbing causes, the action of which strengthens or increases that of the actual cause of disease.

The same method of treatment may restore health in one individual, which may prove fatal to another. Thus, in certain inflammations affecting highly muscular subjects, the antiphlogistic treatment is esteemed; while in other cases bloodletting is prejudicial. The vivifying agency of the blood must ever continue to be the most important condition in the restoration of a disturbed equilibrium, which result always depends on a saving of time. It is obvious, moreover, that in all diseases where the formation of contagious matter and of exanthemata is accompanied by fever, two diseased conditions simultaneously exist, and two processes are simultaneously completed; and that the blood, as it were by re-action [fever], becomes a means of cure, as being the carrier of that substance without whose aid the diseased products cannot be rendered harmless, destroyed, or expelled from the body; a means of cure, by which, in short, neutralization or equilibrium is effected.

#### THEORY OF RESPIRATION.

During the passage of venous blood through the lungs, the globules change their colour, and with this change, oxygen is absorbed—for every volume of oxygen absorbed, an equal volume of carbonic acid is, in most cases, given out. The red globules contain a *compound of iron*, and no other constituent of the body contains iron. The change of colour in the globules of venous blood depends on the action of oxygen.

The globules of arterial blood retain their colour in the larger vessels, and lose it during their passage through the capillaries. The change of colour in the venous globules depends on the combination of some one of their elements with oxygen; which absorption is attended with the separation of carbonic acid gas. This gas is not separated from the serum; as the serum has not the property of giving off carbonic acid, when in contact with oxygen.

Arterial blood when drawn from the body has its florid colour soon changed to a dark red—this is effected by the action of carbonic acid on the globules, florid blood absorbing a number of gases, which do not dissolve in the fluid part of the blood, when separated from the globules.

*It is evident, therefore, that the globules have the power of combining with gases.*

The globules darkened by carbonic acid again become florid in oxygen with disengagement of carbonic acid. The globules of the blood contain a compound of iron. From the invariable presence of iron in red blood, we must conclude that it is indispensably necessary to animal life; and since we know that the globules take no share in the process of nutrition, they evidently play a part in the respiratory process. The compound of iron in the globules has the characters of an oxidized compound. The observations made on the very remarkable properties of the compounds of iron lead to the opinion that the globules of arterial blood contain a compound of iron saturated with oxygen, which, in the living blood, loses its oxygen during its passage through the capillaries. The same thing occurs when it is separated from the body and begins to be decomposed. The compound, rich in oxygen, passes, therefore, by the loss of oxygen into one less charged with that element. One of the products of oxidation formed in this process is carbonic acid.

The compound of iron in the venous blood possesses the property of combining with carbonic acid; and it is obvious, that the globules of the arterial blood, after losing a part of their oxygen, will, if they meet with carbonic acid, combine with that substance. When they reach the lungs they will again take up the oxygen they have lost; for every volume of oxygen absorbed a corresponding volume of carbonic acid is separated; they will return to their former state; that is, they will again acquire the power of giving off oxygen, from the well-known facility with which compounds of the peroxide of iron give up oxygen.

According to these views, the globules of arterial blood, in their passage through the capillaries yield oxygen to certain constituents of the body. A small portion of this oxygen serves to produce the change of matter, and determines the separation of living parts, and their conversion into lifeless compounds, as well as the formation of the secretions and excretions. The greater part, however, of the oxygen is employed in converting into oxidized compounds the newly-formed substances, which no longer form part of the living tissues. Hence, in the animal organism, two processes of oxidation are going on; one in the lungs, the other in the capillaries. By the former, in spite of the degree of cooling, and of the increased evaporation, the constant temperature of the lungs is kept up; while the heat of the rest of the body is supplied by the latter. According to our author's views the iron contained in the blood is the grand means of conveying to the lungs the carbonic acid formed in the system.

Let us suppose that the globules lose their property of absorbing oxygen, and of afterwards giving up this oxygen and carrying off the resulting carbonic acid; such a hypothetical case of disease will soon become preceptible in the temperature and other vital phenomena of the body. The change of matter will be arrested, no lifeless compounds are

separated, neither bile nor urine can be formed; and the temperature of the body must sink; this state of things soon arrests the process of nutrition, and sooner or later death must follow, unaccompanied, however, by febrile symptoms.

In concluding our remarks on this truly valuable accession to medical science, we beg to state that the physiological chemist, as well as the medical practitioner, will find in this work ideas and practical remarks of a decidedly novel character. It is a beautiful, and, we believe, the first specimen of the great services which modern organic chemistry is capable of rendering to practical medicine—indeed, we have no hesitation in saying, that, from its appearance, physiology will date a new æra in her advancement.

In the Appendix to this work, from which, for obvious reasons, we have declined making any extracts, are contained a number of the most recent and accurate analyses, which constitute the evidence on which the author's conclusions are founded.

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ELEMENTS OF GENERAL PATHOLOGY. By the late *John Fletcher*, M.D. Edited by *John J. Drysdale*, M.D. and *John R. Russell*, M.D.

THIS posthumous publication of the lamented Dr. Fletcher, may be considered as a continuation of his "*Rudiments of Physiology*," and will be read with great pleasure by all, who took an interest in the views he promulgated in that learned and valuable work. The volume now before us, although perhaps less striking in the novelty of its doctrines, and less profound in its researches, than its predecessor, is very valuable; and occasions deep regret that its highly talented author should have been so prematurely removed.

His philosophical mind,—his ardent and untiring zeal,—his extensive reading,—and the clear and sensible conclusions he deduces from his experiments and researches,—place him in the highest rank of the physiologists and pathologists of modern times.

The present work is compiled from Notes of Lectures left by Dr. Fletcher; and it is fortunate for his memory, as well as for the interests of medical science, that the task of arranging them has fallen into the hands of the Editors. They have not only succeeded in giving a clear and connected view of Dr. Fletcher's opinions, but have enriched the work by additional notes; which not only elucidate and confirm his doctrines,—but in many instances supply from the writings of continental and other pathologists, what was left defective or untouched by him.

The work is divided into three books, viz. on Etiology—Semeiology—and Therapeutics:—the first division occupying more than half the volume. In the first chapter, on the Remote Causes of Disease, there is nothing particular to arrest our attention. The author defines his views of the va-



rious predisposing and proximate causes of disease—of temperaments—habit of body and the effect of climate and of diet. He then proceeds to speak of the exciting causes, which operate in producing disease, only in conjunction with the predisposing causes, and through the medium of the proximate.

One of the most frequent exciting causes of disease is a variable temperature. Dr. Fletcher thus explains the manner in which heat and cold occasion disease.

Heat, by producing inordinate irritation exhausts the irritable matter, consequently the subsequent irritation even from the ordinary stimuli will be less than usual, and only slowly recover itself—hence inflammation, &c. On the contrary cold, which is nothing more than the absence of caloric, is a defect of the accustomed stimulus, and therefore gives rise to an accumulation of irritable matter, and irritability; which is followed by a greater than usual irritation from no more than the ordinary stimuli. Of the two conditions then necessary to produce a disease, cold may be said to operate in general by increasing the susceptibility, and heat always by increasing the stimulus: but the ultimate action of both is the same; disease resulting as much from the increase of one as of the other. This we may observe is a modification of Brown and Darwin's theory. One of the first changes induced in the system by inflammation, is an alteration in the character of the blood; this fluid exhibiting, when drawn, the buffy coat. This condition of the blood is the effect, and never the cause of inflammation. It results from an imperfect decomposition of the blood in the capillary arteries; so that the ingredients going to form fibrine, albumen and colouring matter, being imperfectly decomposed and passing into the radicles of the veins, communicates the characteristics of sizzly blood. The opposite condition of the blood, as in nervous apoplexy, cases of sudden death, &c. where there is too little fibrine to effect its coagulation, may be accounted for, Dr. Fletcher thinks, by the converse of the preceding explanation.

"If an overloading of the capillary arteries (in which the blood is naturally decomposed) tends to produce an abundance of these principles, an overloading of the radicles of the veins (in which the blood is naturally re-composed) might be supposed, *à priori*, by preventing absorption, calculated to produce a deficiency of them. Now such an overloading or congestion of the venous system always takes place in cases of sudden death, owing to the suddenly impeded action of the lungs, while that of the heart is undiminished, by which the blood is always accumulated in the veins. It appears therefore a simple and beautiful view of the matter to refer all superabundance of the principles to inflammation, all deficiency of them to congestion; and we may be satisfied that, except when the preternatural coagulation or alteration of the blood is produced directly by chemical agents thrown into it, this explanation is applicable." 41.

Dr. Fletcher combats, with success, we think, the doctrine which supposes the buffy coat in the blood to arise from some morbid matter with which it may be impregnated; and thus becoming the cause rather than the effect of the disease in which it displays itself. He is not so conclusive in his arguments against the blood undergoing other primary morbid changes, and hence conveying the materies morbi in some constitutional and other ailments: a doctrine which, at the present day, seems to be

gaining ground. Dr. Fletcher's predilection for the doctrine of irritation and sympathy as the means by which disease is propagated, leads him to disbelieve the existence of peccant matter in the blood, whether it be induced by primary changes in that fluid itself, or be the result of absorption.

We are not the advocates of any exclusive opinions, yet we so far incline to the doctrines of the humoral pathologists, as to believe that they frequently lead to successful treatment. In gout and gravel for instance (diseases which Dr. Fletcher brings forward in support of his own views) we apprehend the blood, either from repletion, impaired digestion or other causes, acquires a vitiated character, and the most successful treatment consists in changing, or eliminating from the system, these peccant causes.

The third Chapter, on Light, Electricity, and Air as Causes of Disease; contains some valuable observations on the nature of contagion and infection.

The author properly restricts the former term to those morbid emanations which are generated by the bodies of the sick; while the latter is applied to those miasms which arise from marshy grounds and other causes. It must be confessed that the knowledge we possess of the nature of the miasms of contagion and infection, is very limited, our information is principally confined to an investigation of their laws and effects. Dr. Fletcher is of opinion that dead and putrid animal or vegetable matter does not generate infectious miasms. The malaria arising from marshes and close damp woods, he attributes rather to diseased living vegetables than putrefying animal or vegetable substances. "The state in which vegetables exist in marshes and close wet woods is manifestly unhealthy and similar probably to that in which the animal body exists when laboring under a contagious disease; and as the animal body when dead ceases to put forth these miasms as its other secretions become less virulent, a fact well known to dissectors, so the vegetable body when dead ceases to emit any noxious exhalations." 69.

With respect to the manner in which contagious or infectious matters enter the body in order to produce their effects, there are three principal opinions, viz. that they do so either by the lungs, the stomach, or the skin. The first is the most ancient conjecture and is advocated accordingly by Lucretius: it has been supported also in recent times by Fermelius Sanctorius, and lately by Sir A. Cooper.

The second was likewise an ancient notion and has been advocated recently by Lind, Darwin and Jackson. The third opinion seems to have originated with Fracastor, and has had but few advocates since his time. Our author inclines to the first of these opinions, and in the main we coincide with him. Our knowledge of the laws of contagion is however still too imperfect to enable us to dogmatise, or form any exclusive opinions on the subject.

Dr. Fletcher's advocacy of the doctrine of irritation and sympathy leads him to the conclusion, that it is not necessary that the contagious miasms be absorbed into the system to produce their effect.

"We have," he says, "no evidence whatever that such miasms ever require to be absorbed into the blood to produce their effect. Nay it is not improbable that such an absorption, if it really took place, would rather diminish than increase

their action. This subject will be adverted to afterwards, but in the mean time we may observe that the most rational opinion of their mode of action (like that of heat, cold, &c.) is, that they produce in the parts exposed to them merely an irritation of a certain character, which being conveyed by sympathy to the organ on which chiefly they are to display their effects, excite there a secondary irritation, in which the disease consists." 80.

The Editors subjoin, in a note to this Chapter, some curious researches of Professor Heule of Zurich, on the essential nature of miasms themselves.

The view taken of this subject by Heule is that the miasmatic contagious diseases (corresponding to the purely contagious, and to those both contagious and infectious of Fletcher) depend for their existence and propagation on certain parasitical organized beings, or their germs, whose presence and development in the body are the exciting cause of the symptoms which constitute these diseases.

This subject is very interesting, but we must refer to the work itself, as well as to the researches of Professors Heule and Liebig, for its further elucidation.

In the next Chapter, on Aliment, there are many sensible remarks on the tendency of certain articles of diet and habits of life to produce disease.

Laryngitis is said to be a consequence of frequent dram drinking: cynanche pharyngea, inflammation and scirrhus of the gullet, often result from liquids taken to hot; while acid or cold liquids taken while the body is hot, are a common cause of gastro-enteritis. "With respect to gout it is unquestionably a frequent consequence of intemperance in the use of animal food and fermented liquors, and (but not in the way commonly supposed) not owing to any vitiation of the blood." 95.

In a note appended to this extract our author states his opposition to chemical and humoral doctrines, and, as it contains a summary of his mode of reasoning and views on this subject, we will quote it. We do not, however, quite coincide with him: we think the hypothesis he impugns are not so wild as he imagines, and that he occasionally "leaps to conclusions," without a careful induction of facts.

"This doctrine (the vitiation of the blood in gout, &c.) originated with the chemical pathologists, who chose to represent the blood in this disease as adulterated with a tartaric, at other times with a bilious salt; sometimes with an alkali, at others with an acid. Cullen has the merit of having done much to abolish this absurdity, but since the unfortunate discovery in 1797, that the calculi deposited in the bursæ mucosæ in this disease, contained lithic acid, which acid unluckily contains nitrogen, it has again been confidently presumed that gout (like nephritis and urinary calculi) arises from an abundance of this principle; and that animal food is instrumental in producing it, by affording this principle in excess; and this view of the matter seems to be backed by the old observation, that gout and gravel are frequently combined. It is needless to repeat here the numerous objections already stated to this wild hypothesis, as well as to that founded upon it, and supported by many 'leapers to conclusions' among ourselves, that it consists in an abundance of ready-made lithic acid in the blood. In Asiatic cholera the blood has by some (Dr. Stevens, &c.) been represented as primarily affected,—turned into an infected jelly for one thing, and of a prodigiously dark colour for another; the latter change dependent, of course, on too little salt in the serum. These however, are not primary

but secondary changes of the blood, and arise from the depression of the powers of circulation, so that through the tardy flow of the blood through the parenchyma, its molecular changes are so sparingly effected that it undergoes a partial coagulation. The use of warm saline injections is not to dilute the jelly aforesaid, nor to impart salts, but merely to afford a transitory stimulus to the heart, and thus accelerate for a time the circulation." 96.

Dr. Fletcher's opposition to a vitiated condition of the blood being the cause of disease, leads him to doubt whether morbid poisons are generally absorbed: he thinks they occasion disease in the same manner as infectious miasms, viz. by exciting in the organ to which they are immediately applied, a peculiar irritation which, when conveyed by sympathy to the other parts of the body, produces its principal effects on that part which is most adapted by its specific irritability to be so acted upon.

In a very sensible note the editor clearly shows that Dr. Fletcher has greatly underrated the frequency of the absorption of poisons. They also subjoin a very interesting table showing the various poisonous and other substances—such as quicksilver, arsenic, indigo, &c. &c. which have been detected in the blood, and others, such as copaiva, hyoscyamus, &c. which have been found in the excretions, and must of course at one time have been contained in the blood.

In the chapter on Sympathy and the Passions as influencing Diseases, Dr. Fletcher adopts the idea we contend for—that exclusive principles of reasoning will not apply to medicine. For instance, it has been concluded that, because fever very frequently arises from local inflammation it necessarily always does so—and since the appearance of Broussais' works every question with respect to diseases in general has been answered by some certain pathologists with the single word "gastro-enterite." In exposing however the sweeping conclusions of others, Dr. Fletcher does not seem to be aware that he is sometimes liable himself to the same imputation: his conclusions are occasionally warped by his preconceived theory, and his practical deductions made subservient to it.

One of our author's hobbies we need scarcely remark, is sympathy. "It is by means of sympathy alone that all the exciting causes of disease already mentioned, *when they produce diseases in parts at a distance from those to which they are directly applied*, must be presumed to operate, and it is on this principle that many of the effects of heat and cold, of the numerous corruptions of the air, of various kinds of aliments, and of several poisons, have been already explained, and we shall have occasion to speak of the same agent in explaining that of some other exciting causes of disease, as well as of many remedies by which diseases are removed." 117. Dr. Fletcher then goes on to notice the influence of sympathy, as it regards the production of one disease from another. Among the two or three familiar instances he adduces as proofs that diseases are propagated by sympathy, is inflammation of the eyes in gonorrhœa. With respect to this intractable malady we believe that it is seldom, if ever, produced by sympathy. Our own observation would lead us to the conclusion that it is the result of the actual contact of gonorrhœal matter, applied to the eyes by the fingers involuntarily, and even during sleep. In this opinion we believe we are borne out by Lawrence, Jacob, and other writers on the eyes: but we should not have noticed so apparently trivial a matt

had it not been by way of caution : for the disease may almost invariably be prevented by timely care on the part of the patients.

In the 6th and 7th Chapters, on Accidental Stimuli, the Excretions, Exercise, &c. as Causes of Disease, there are many sensible practical remarks, but we do not observe any striking novelty. We agree with Dr. Fletcher that copious bloodletting and hæmorrhage are frequent causes of disease, and great praise is due to Dr. Marshall Hall for the care with which he has investigated this subject.

Were we disposed to cavil at Dr. Hall, we should say that many of his distinctions are somewhat too refined, and the contra-indications about bloodletting not sufficiently clearly pointed out. In the treatment of puerperal diseases, for instance, we question whether they may not occasionally deter practitioners from the use of the lancet, when the safety of the patient depends on it. We entirely concur, however, in the sound practical information embodied in the following quotation from the work before us.

“The instrumentality of copious hæmorrhage or blood-letting in producing puerperal fever was insisted on by White and Mannering, and its effects in occasioning dropsy have been observed from the earliest time. Good, also Abercrombie, M. Hall and many others, have distinctly traced hydrocephalus to that cause; and it was proved many years ago by Kellie and Saunders, that by bleeding animals to death, they always produced a deposition of serum in their brain.

That the insanity of puerperal women also often arises from the hæmorrhage which they have undergone, is proved by Good, M. Hall, and many others; and that a kind of delirium tremens with constant watchfulness has often (particularly in young persons) this origin, is well established, so also that epileptic convulsions often arise from this cause is abundantly well known, and perhaps this is not unfrequently the origin of those which so frequently occur during parturition.\* In addition to these, amaurosis has been observed to arise from this cause by Richter and Travers; and nervous apoplexy is as well known a result of it in the old, as delirium tremens in the young. The explanation of all this is sufficiently easy. With respect to the organic diseases above mentioned, their essence—not less the dropsies than the fevers,—is inflammation : and how readily inflammation is excited by a want, as well as by an excess, of any ordinary stimulus is well known. If cold then can produce this state, we should *a priori* say that hæmorrhage may do so too.

Nor with respect to the functional diseases is the difficulty greater. In the case of insanity it acts obviously on the vessels of the brain, so as to produce irregular circulation; and it is still through the brain, in all probability, in the case of syncope in which the heart principally suffers, in delirium tremens and nervous apoplexy, which involves both the mental faculties and the voluntary motions, and in that of epilepsy which involves the latter only. ‘En privant,’ says Andral, and most truly, ‘le cerveau de ses excitants accoutumés on peut produire précisément ces mêmes effets que ceux auxquelles on donnerait lieu en augmentant la quantité de ses excitants.’ ”

The Editors have appended to the 7th Chapter some very interesting results obtained by Professor Rokitsky, on the incompatibility of certain

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\* “One of the most common consequences of this exciting cause of disease is a kind of chronic syncope, similar to what is called mercurial erethism, displaying itself chiefly in a remarkable susceptibility to any impression and a tendency to syncope from the slightest causes.” (Pearson, Cooke, &c.)

diseases with each other. From the earliest ages a vague idea has prevailed that two diseases could not co-exist in the system. This opinion was thus far modified by John Hunter, who says that "no two actions from two different morbid poisons can go on together at the same time, in the same part, or the same constitution." Later observations, while they have shown this statement, as expressing a general law to be erroneous, have at the same time indicated, that certain diseases exert upon others an opposing influence, in the way of the one arresting the course or modifying the nature of the other. For example, measles and small-pox have been observed to suspend, or modify the course of each other. Whooping-cough sometimes suspends the small-pox, measles and scarlet fever. Whooping-cough is frequently cured by vaccination. It is sometimes also cured by small-pox and measles. Vaccinia may suspend, or in its turn be suspended by scarlatina. The plague was arrested by the prevalence of small pox, but broke out again on its disappearance, according to Baron Larrey.

But these and other isolated facts are not of a sufficiently definite character to have attracted much attention: and it remained for Professor Rokitsansky, whose unequalled opportunities of observation and acknowledged accuracy create the most perfect confidence in his investigations, to put this matter wholly in a new light, by establishing from an amount of cases that renders fallacy in the result almost impossible, that certain diseases never co-exist; as the presence of the one arrests the progress, or prevents the occurrence of the other. The typhus abdominalis, *i. e.* with formation of the characteristic typhous matter, and which by Rokitsansky is always understood under the name of typhus, is excluded by the various forms of puerperal fever. In 200 dissections of puerperal fever he did not find one complication of the typhous process. This immunity from typhus is given by the pregnant state, child-bed, and even, though in a less degree, by suckling.

Typhus and cholera, and typhus and dysentery are said to have the power of mutual exclusion: and the co-existence of tuberculous disease and typhus is extremely rare. Carcinoma and tuberculosis [*i. e.* tuberculous disease] are antagonist diseases: and the latter and all kinds of serous cysts are never met with simultaneously in the same organ, or even in the same individual. Tubercular disease affords an immunity from cholera, dysentery, hypertrophy of the heart, curvature of the spine, dilated bronchia, and almost all chronic diseases of the stomach. Tuberculosis and aneurism do not co-exist, and Rokitsansky as well as others has remarked that the development of tubercle is arrested, although the disease is not subdued, by the pregnant state, as likewise by all large tumours of the abdomen. These conclusions are derived by Rokitsansky from numerous post-mortem and other examinations, and although exceptions may occasionally occur, yet if their main truth be established by subsequent researches, they may be rendered available in the history and treatment of various affections: and furnish a text for more extended inquiries by future pathologists.

The three following Chapters on Inflammation, its Consequences, and Fever, are principally occupied with the history of the various theories which have been advanced on these debatable subjects. We have before

noticed Dr. Fletcher's own views, as to the operation of those causes, such as heat, cold, &c. which occasion inflammation; the immediate effect of these causes he thus states.

"This morbid change (inflammation) consists evidently in a preternatural dilatation by blood of the capillary arteries, veins and lymphiferous and chyloferous vessels constituting the parenchymatous tissue of a certain part, produced by either, first an increased and afterwards a diminished action of the vessels, or first a diminished afterwards an increased, and again a diminished action, according as the exciting cause has been either positive and stimulant, or negative and sedative, the blood becoming accumulated in them, not because they contribute less to its propulsion (for their action in this way is perhaps unnecessary), but because they are less able to resist the impulse with which it reaches them, and their calibre therefore becomes increased. They probably transmit neither more nor less blood than in a state of health; but owing to the increase of calibre, it of course traverses the vessels with less than its accustomed velocity." 157.

This simple view of the matter comes probably as near the truth as any of the multifarious theories that have been propounded on this subject; and the Editors subjoin a very long and elaborate note confirmatory of it, from the writings of various continental pathologists.

The doctrines with respect to the nature of fever have at all times depended more or less on those which were prevalent respecting inflammation; and Dr. Fletcher's theory does not falsify this assertion. He thus states it:

"This morbid change (fever) consists equally evidently in a preternatural dilatation of the capillary vessels of the whole surface of the body, produced always (at least when it arises from local inflammation) by, first an increased and afterwards a diminished action of these vessels, since the immediately exciting cause of fever in this case (viz. sympathy) operates always as a stimulus." 174.

The five subsequent Chapters are devoted to the consideration of the Products of Inflammation; and contain many ingenious speculations on the origin of tubercle, cancer, calculi, and other diseased formations.

Dr. Fletcher regards inflammation as the cause of most of the morbid products and diseased tissues of the body. In tracing tubercle, scirrhus, tumours, &c. and the various morbid fluid secretions to this cause, we believe he is supported by well-grounded argument; but we must pause before we admit his conclusion, that calculi, worms and other parasitical formations are usually, if not invariably, the result of inflammation. We have not space however to detail, or enter fully into, Dr. Fletcher's arguments on these controverted subjects. His opinions however are stated with great clearness and perspicuity, and he displays considerable critical acumen in detecting and combating the errors of former writers. A short Chapter on Spasms and Spasmodic Affections, concludes this, the etiological portion of the work.

*(To be concluded in our next.)*

A PRACTICAL TREATISE ON THE DISEASES OF THE SCALP. By John E. Erichsen, Member of the Royal College of Surgeons, &c. &c. Octavo, pp. 192, and Six Plates. London: Churchill, 1842.

MR. ERICHSEN'S object in bringing this Treatise before the public, will appear from the following announcement in his Preface:—"I should feel that some apology were necessary in adding another to the already extended list of works on the Diseases of the Skin, were I not convinced that on the subject of the present treatise, the Affections of the Scalp, much error of diagnosis, and consequent confusion of treatment still exists. It is with the hope of remedying the one, and of simplifying the other, that this volume has been undertaken. It cannot, of course, be expected that much that is new can be advanced on a subject that has attracted the attention of so many eminent Dermatologists, and that has been so assiduously cultivated as this; but yet, I trust that by arranging what is already known on these diseases in a clear and methodical manner, by simplifying their diagnosis, and by showing how readily amenable they are, as much so as any other class of affections, to a rational mode of treatment, that the object I had proposed to myself might be accomplished.

"The writings of Willan and of Plumbe on the diseases of the scalp, excellent as they are in many respects, have appeared to me to tend to perpetuate the confusion that yet envelopes these affections, by their being grouped in them under the one term of 'porrigo,' a most artificial and unphilosophical nomenclature, by which the very purposes of classification are defeated; and a set of diseases differing from one another in nature, seat, character, causes and treatment, considered as species of the same genus, whilst, on the contrary, they belong to distinct orders. Why this practice of classing together all scalp affections into one group has been continued, it is difficult to understand; for although their distinctive characters are, to a certain degree, obscured and modified by local situation, by the presence of hairs, &c. yet if care be taken, they will be found to be sufficiently strongly marked not to be mistaken, by even a somewhat unpractised eye, and to enable the practitioner to refer them, without much difficulty, to the class to which they belong.

"Impressed with the conviction that these diseases will never be understood, until they are no longer considered as cases *per se*, but are placed in those orders to which their *elementary characters* point them out as belonging, I have, in the present treatise, discarded all *specific* names, and have arranged them in accordance with these characters. I have also endeavoured to direct the attention of the reader more particularly to their differential diagnosis, which is the only sure guide to a safe and rational treatment."—*Pref.* vii.—ix.

We fancy that, with a little transposition of words the identical complaints, hopes, regrets, and promises have been uttered by every writer on cutaneous disorders for the last twenty years. We shall see what Mr. Erichsen will do.

Over a Historical Introduction of thirty-four pages we may not incon-



veniently nor unprofitably pass. We then arrive at some "General Observations," from which we shall select what strike us. Prior to offering a classification of scalp diseases, Mr. Erichsen remarks:—"Under the names of *scald head*, of *tinea*, or of *porrigo*, how many different diseases have there not been included? Diseases, such as impetigo, eczema, pityriasis, and favus, differing entirely in their nature, causes, effects, and treatment, and agreeing only in the part affected, have all been confounded together under one or other of these unfortunate terms. It certainly appears preposterous that a disease should go by a different name when it occurs on one region of the body than when it is situated in another."

However true this may be, there is certainly no absolute novelty in it, for we go no further than Rayer's book to find precisely the same views. We find in that, eczema, pityriasis, psoriasis, &c. described as they affect the scalp. This, then, the basis of the work, may be said to be a truism, inasmuch as all well-informed men have for some time past admitted and acted on it. It remains for us to see how Mr. Erichsen will develop the details of what is familiar in the general. His classification is this:—

"Scalp diseases arrange themselves naturally into the orders, *vesiculæ*, *pustulæ*, *tuberculæ*, and *squamæ*.

But two genera of the order *vesiculæ*, eczema and herpes, affect the scalp. The former of these is divisible into *acute*, and *chronic eczema*, *eczema furfuracea* and *e. amiantacea*.

The genus *herpes* includes *h. circinnatus* and *h. zoster*.

*Impetigo* is the only pustular disease that ordinarily affects the scalp. When occurring in this region it is divisible into three species, viz. *impetigo eczematosa*, the impetigo or porrigo larvalis of others; *impetigo granulata*, the porrigo or tinea granulata; and *impetigo sparsa*, the porrigo favosa of Willan.

For reasons to be afterwards explained, I have thought that *favus* could with more propriety be considered a tubercular than a pustular affection, meaning by *tubercular* not a disease, like lupus, characterised by the presence of small tumours, but one in which true tubercle is deposited; I have therefore removed it from the order *pustulæ*, and have placed it by itself.

The only squamous disease that commonly occurs on the scalp is pityriasis. Lepra and psoriasis are also occasionally, though rarely, seen in this region."

Of course on the scalp, as on the other parts of the body, these orders of cutaneous alteration run into one another.

Mr. Erichsen states, we think with truth, that the local condition in scalp affections is, for the most part, inflammatory. This, however, does not seem to be the case with Favus.

Speaking of the local and constitutional causes of cutaneous diseases, Mr. Erichsen seems to us to speak too doubtingly of their connexion with disorders of the digestive organ. "There has certainly," he says, "been too great a stress laid by some writers upon what has been considered to be a sympathetic connexion between the digestive organs, more particularly the liver, and the skin. But although we may question whether this connexion exists to the extent that has been supposed, still it would be

unwise to reject it altogether, as we continually meet with instances in which one of the first indications of a derangement of these organs is an eruption of acne, of herpes, or of impetigo, especially about the face, which has been immediately removed on a restoration of the normal action of these viscera." We think it is impossible for any practical and experienced man to doubt the connexion, more frequent and more intimate than Mr. Erichsen is willing to allow, between disorders of the digestive organs and affections of the skin, as well as between some morbid condition of the humours and the latter.

Our author admits that scalp diseases are not so contagious as has been imagined. But of the ready transmission of favus by contact there can be no question; for notwithstanding the opinion of Alibert, that English physicians had been too hasty in admitting this, it is now most satisfactorily proved by numberless cases. Eczema seems also, in some instances and under peculiar circumstances, to be contagious.\*

"Individuals of a scrofulous diathesis are peculiarly liable to most of the diseases of the scalp, but more especially to favus, simple chronic eczema, impetigo eczematosa, and impetigo sparsa. By far the majority of children labouring under these affections, will be found to present what are usually considered to be marks of a scrofulous habit of body, at least the fair variety of it; that form of it characterised by a dark sallow complexion, predisposing them rather to impetigo granulata. As diathesis is so intimately connected with the hereditary transmission of disease, we should expect that in many cases there would be an hereditary predisposition to affections of the scalp, parents transmitting to their offspring the diathesis, and consequently the disposition that it gives to particular classes of disease. It is said that favus has been, in some rare instances, found to be congenital, but this is doubtful, and requires confirmation.

The frequency of the occurrence of the diseases of the scalp, and the kind of disease that is likely to occur, their absolute and relative frequency, is much influenced by age; the earlier years, especially the period of the first and second dentitions, being by far more subject to these affections than any subsequent age, although they are occasionally met with after puberty, and even in advanced life. The nature also of the affection that will probably manifest itself is much influenced by the age of the individual, thus impetigo eczematosa is most frequently met with before the third year, whilst impetigo granulata is rarely seen until after that period. At the early age at which scalp diseases usually, occur, sex appears to influence the constitution but little, and consequently does not, as in after life, predispose to any particular affection.

Eczema amiantacea seems to be the only one of these diseases that is under the influence of moral causes. How these, more particularly the depressing passions, act in giving rise to this affection is uncertain, but that they do so, is established beyond a doubt by the concurrent testimony of all those who have had an opportunity of studying this complaint." 15.

Mr. Erichsen makes some general remarks on the *Treatment of Scalp Diseases*. He observes, that the local treatment presents four indications.

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\* "Pujol relates a remarkable instance of this. A dentist labouring under acute eczema of the hands, infected in one day the faces of a number of pupils at the Military Academy of Sorr ze.—(Rayer.)"

"1st. To prepare the scalp for the application of topical remedies by the removal of the hair and scabs.

2nd. To lessen any irritation, or inflammatory excitement that may exist.

3rd. To excite the part to a new action by the employment of proper local means.

4th. To continue the use of the remedies for some time after the disease has been, to all appearance, cured."

1. The removal of the hair is *the* first thing. If the head can be shaved so much the better. If not, the hair should be cut close.

"In some affections, as in favus, the hairs act as foreign bodies in the diseased follicles, and it therefore becomes necessary to remove them from their attachment to the bulbs. This used to be effected by means of that barbarous application the pitch cap, and more recently by the equally cruel one, of pincers; but both these methods may be entirely superseded by the use of gentle depilatories, which effect the same purpose without pain or trouble. The most useful of these are alkaline ointments and lotions, which if applied every evening, or morning and evening, will in the course of a very short time cause the hairs to be sufficiently loosened, to be removed by means of a small-toothed comb passed repeatedly and lightly through them, after they have been cut to the length of an inch or an inch and a half." 20.

To get rid of the scabs is most easily effected by the "application of a large bread and water poultice which should be covered with a piece of muslin or of gauze, so as to prevent the crumbs from adhering to any hairs that may have been left. Linseed-meal poultices are objectionable, as they sometimes set up a considerable degree of irritation, giving, rise even, in some tender scalps, to an eczematous eruption. Fomentations may be employed for the same purpose, but unless much inflammation be present they are not so serviceable as poultices, with the use of which, however, they may frequently be alternated with advantage." Ointments are apt to become rancid and irritating. But we have seen them of great service in subduing irritation notwithstanding. We agree with Mr. Erichsen, "that the use of poultices and fomentations, one or both, should be persevered in until all the inflammation that accompanies the onset of eczematous and impetiginous affections of the scalp has been subdued, and as long as this state continues no other local means should be resorted to; stimulating applications of all kinds being especially avoided, as they cannot possibly be of any service, and are constantly productive of the most mischievous effects; keeping up for weeks, and months even, a disease that, under rational treatment, would subside in the course of a few days."

2. Irritation and inflammation are relieved by the same means that promote the detachment of the scabs. Depletion, local or general, *may* be necessary.

3. The next object is to set up a new action in the vessels of the diseased scalp. On this point, Mr. Erichsen observes:—

"The alkalies and their carbonates, more especially the preparations of potass, exert a very beneficial influence on many of the more chronic diseases to which the scalp is liable. It will be found, that during their use in the chronic forms of eczema and of pityriasis, the scalp will very quickly be freed from the scurf

and scales, which in these affections cover it to a considerable extent, and that the skin will very soon assume a clean, smooth, healthy appearance, these preparations appearing both to act chemically upon the epidermis and to stimulate the cutis to a more healthy action. In the form of ointment they are very useful in the treatment of favus.

The alkaline sulphurets are equally serviceable, and in the treatment of scalp diseases supply the place of sulphureous baths. The sulphuret of potassium, in the proportion of one or two drachms to a pint of water, will be found more generally useful than any other local application in those chronic cases of eczema or of impetigo in which there is but little inflammatory action going on, and which are attended by no discharge. As these preparations are powerful stimulants, exciting the vessels of the skin to an increased activity, their use is contra-indicated as long as any active inflammation exists, as it would infallibly be augmented by them.

Lotions containing the metallic salts, such as the sulphates of copper or of zinc, or the nitrate of silver, may be employed with marked benefit in those cases of eczema which are attended by a considerable oozing of serous fluid from a multitude of small openings, without the formation of any fresh vesicles. In some very chronic and indolent cases of this description, the strength of the solution of the nitrate of silver may be increased to ten or fifteen grains, or even to a scruple of the salt to an ounce of water, with marked advantage. A lotion of this strength sets up an active inflammation in the part to which it is applied, that appears to destroy or to modify favourably, the chronic action that is going on, for when the artificial inflammation is subdued, the scalp will in general be found to revert to a healthy condition without any recurrence of the disease. The inflammation being however, for the time, greatly increased, some alarm is apt to be excited in the mind of the patient, who imagines that the means adopted for his cure are only augmenting the severity of his disease; it therefore becomes necessary to put him upon his guard in this respect. When these lotions are employed of a milder strength they appear to arrest the discharge by constringing the vessels of the scalp, and thereby removing that passive, atonic state, which is so common a consequence of chronic inflammations, especially in scrofulous lymphatic subjects.

Various ointments are employed in the treatment of these diseases; they should however be dispensed with as much as possible, as the application of a greasy substance, which is frequently rancid, very commonly increases any inflammation that may already exist. I have certainly seen more harm than good result from the use of these preparations in eczema and impetigo of the scalp, in which diseases lotions may be substituted with advantage, as they are less likely to irritate the skin, besides having the additional recommendation of being much more cleanly and agreeable to the patient. In cutaneous affections ointments should only be employed for the purpose of stimulation; a soothing ointment is a misnomer, for as the grease, which necessarily enters into its composition, is always an excitement to the skin, no substance with which it can be combined can exert a soothing or sedative influence upon that tissue, whatever it may upon the system generally. Of the ointments of the *Parmacopœia*, those of the nitrate of mercury, of the nitric oxide, and of the ammonio-chloride of the same metal, will be found to be the most useful, and, according to the degree of stimulus required, to answer every purpose. As has already been stated, the carbonate of potass, when made into an ointment, is an excellent depilatory. The preparations of iodide, such as the iodides of sulphur, mercury, lead, and arsenic, may also be employed in a similar form with marked benefit. The iodide of sulphur, in the proportion of from twelve grains to half a drachm, to an ounce of lard, exerts a most beneficial and energetic action in chronic cases of favus, more particularly when it is combined with the occasional use of alkaline lotions. It is to Biett that we owe the introduction of this preparation in

the treatment of the diseases of the skin, and it certainly has proved to be a most useful auxiliary to the means we already possessed." 26.

We observe that Mr. Erichsen repeats the cuckoo-note about grease. This appears to be a dogma at University College, and Mr. E. is, we suppose, bound "jerare in verba magistri." The absurdity of denouncing "soothing ointments" will be palpable enough to whoever has laboured under affections of the skin attended with much itching or irritation. The effect of lotions in relieving either is generally very inferior, and the ointment of zinc and lead in nine cases out of ten soothes more than all the washes that ever were composed.

The *General Treatment*, according to our author, comprises four indications :

"1st. Lessen or subdue any excitement or inflammatory action that may be going on.

2d. Modify or remove the morbid action set up in the economy, on which the local disease is dependent.

3d. Lessen irritation.

4th. Support the powers of the system when they have suffered in consequence of the profuseness of the discharge, or of the irritation produced by the disease." 27.

Purgatives are of course insisted on; the aqueous extract of aloes, combined with a mercurial, and followed by a saline aperient, is recommended.

Among the alteratives the preparations of iodine are lauded. Mr. Erichsen writes:—"The iodide of iron, in doses of a quarter of a grain to two grains three times a day, will be found to be of essential service in cachectic or scrofulous habits, appearing to conjoin the advantages of a tonic with those of an alterative. When given in combination with those bitter infusions with which it is compatible, it is a most valuable adjunct means in the treatment of those cases of favus and of eczema that occur in scrofulous subjects. Its administration requires, however, some little care, as it is apt to excite the system."

Mr. Erichsen speaks favourably of the sulphuret of potassium. It forms he says, a very active preparation, which may be employed with advantage, instead of the Harrogate or other sulphureous waters, in doses of from five to fifteen grains in a glass of water. The bowels should at the same time be kept gently open with small doses of some saline aperient, such as the tartrate of potass or the sulphate of magnesia, as otherwise the sulphuret of potassium is apt to stimulate the system too powerfully. The chief objections to its internal use are its nauseous taste and odour, which are usually very potent objections indeed.

To allay irritation, Mr. Erichsen recommends the tincture of hyoscyamus and diluted hydrocyanic acid. He adds:—"The mineral acids are also of great use in allaying the itching and tingling that so commonly occur in the impetiginous and eczematous affections of the scalp. The diluted nitric acid may be given with this view in doses of from ten minims to half a drachm, and the diluted hydrochloric acid in doses of from twenty minims to a drachm, in a glass of barley-water, or with a little syrup of capillaire, or of orange-peel, twice a day. After they have been con-

tinued for some time, their employment must be intermitted for a few days, as otherwise they are very apt to give rise to some irritation of the digestive organs."

We confess that we have seen more harm than good from the mineral acids in eczema. They have in many instances aggravated the irritation and produced an exacerbation of the eruption.

When the powers of the system have been reduced, tonics are necessary.

Throughout his observations Mr. Erichsen makes no mention of the liquor potassæ. Yet we venture to say, that, judiciously and boldly exhibited, it is worth all the physic he has spoken of put together. And while he enumerates the mineral acids and quina and iron, stimulating tonics that are as likely to do harm as good, he makes no allusion to the mild and much more safe and valuable tonic sarsaparilla.

#### VESICULAR DISEASES.

These form the subjects of the second chapter.

Mr. Erichsen follows Bielt in dividing eczematous affections into *acute* and *chronic*, the latter comprising *simple chronic eczema*, *eczema furfuracea*, and *eczema aniantacea*. This division is certainly the most simple and practical, as the chief indications in the treatment of this disease vary according as it is acute and active, or chronic and passive, in its nature.

*Acute Eczema of the Scalp.*—Mr. Erichsen gives an accurate description of this. "The appearance," he says, "of any eruption in this disease is always preceded by a sensation of heat and tension in the scalp, with some itching and tingling; if the part be now examined, a red blush will be observed upon it, and its temperature will be found to be sensibly augmented. This exanthematous blush, which always precedes acute eczema, frequently escapes attention in the first attack of the disease, but it may be observed to be of constant occurrence in those cases that supervene upon a chronic form of it. After it has continued for a few hours, an eruption of small vesicles makes its appearance, and the nature of the affection is at once recognizable. These vesicles, which are at first very small, gradually enlarge until they attain the size of a pin's head. On their appearance the pruritis and tingling is usually somewhat lessened, but this is not always the case. They are for the most part evolved in patches, each of which contains a number of them very closely set together, but sometimes they occur in large clusters. The fluid contained in them is at first clear, limpid, and either colourless or else of a slightly yellow tint; it soon, however, becomes turbid and milky in appearance, and if the vesicle remain two or three days without breaking, or being ruptured by the patient scratching the part, it will be found to have assumed a puriform aspect.

The vesicles are at first always somewhat pointed in figure, but as they become larger they may assume a spherical or globular form; they are situated between the hairs, which consequently do not traverse them, although this appears occasionally to be the case when two or three of

them have run together inclosing a hair, as it were, in their centre. Sometimes the fluid contained in them appears to be re-absorbed, leaving merely thin, white, scaly incrustations on the surface of the scalp, which, from their close resemblance to, have often been mistaken for the scales of pityriasis. More commonly however, on the second or third day, the vesicles give way, and their contents being effused, form, on drying, small, rather thin, yellowish-white or greyish scabs, which mat and bind the hairs together. If the disease be not arrested in this early stage, a thin semi-transparent fluid having some resemblance to lymph will continue to exude, frequently without the formation of any new vesicles, from numberless small openings left in the site of the old ones. 'This fluid, if in large quantity and not very viscid, soaks the hair and forms it, especially about the roots, into small bundles, which are soft, moist, and of a dirty yellowish-grey colour. If the quantity of secretion be not quite so great as this, it dries into scabs, which, by being constantly added to the former ones, gradually cause them to acquire considerable thickness and size. The growth of the hairs, that are entangled in these scabs, gradually separates them from the scalp. This process is rather curious, the scabs being always lifted off in the direction of the growth of the hair; thus those that are situated on the fore-part of the head are first raised off at their anterior part, whilst those, on the contrary, on the occipital region are first of all loosened at their lower aspect. When the scab is completely separated from the skin, it becomes dry, assuming a white pulverulent appearance, gradually crumbling and breaking away.'

With respect to the treatment of acute eczema we see nothing to detain us.

*Chronic eczema* is divisible into three species:—

"1st. *Simple chronic eczema*, which may be either moist or dry.

2d. *Eczema furfuracea* corresponding to the *porrigo furfuracea* of Willan, the *tinea furfuracea* of others, and the *achor lacuninosus* of Alibert.

3d. *Eczema amiantacea*. The *teigne amiantacée* or *porrigo asbestina* of Alibert, who was the first to describe this form of the disease.

These are not necessarily preceded by an acute attack.

*Moist Chronic Eczema* is thus described by our author.—"There is always a very copious discharge of a thin serous fluid from a number of small openings in the scalp, which are usually very closely set together and very numerous. This discharge, which is frequently of an acrid and irritating nature, is apt to increase the inflammation in that part of the skin on which it is allowed to remain, or over which it flows. If it be very abundant, the hair looks as if it had been soaked in a thin solution of gum arabic, being matted together in locks, which have a dirty yellowish-grey moist appearance, and between and under which, the inflamed scalp may be seen to be perforated by a number of minute openings, which pour forth the discharge. As it lessens in quantity soft yellowish-grey scabs will be formed, which gradually losing their moist appearance, will be found to resemble those that characterize the dry variety of the disease. In the midst of this, acute attacks of eczema, attended by a fresh evolution of vesicles, by increased heat and redness of the scalp, frequently oc-

cur, adding very greatly to the severity and obstinacy of the disease. A peculiar pungent acid odour, somewhat resembling that of the fumes of acetic acid, is at the same time evolved from the head, and the distress of the patient is often greatly increased by a chronic inflammation of the eyes and ears, which is very apt to occur in this form of eczema. As the discharge lessens, the moist, in many cases, gradually passes into the dry variety of the disease.

2. *Dry Chronic Eczema* may be very limited or extensive on the scalp. "The disease," says Mr. Erichsen, "is characterized by scales or scabs of a yellowish-white, yellowish-grey, or yellowish-green colour, which are darker in their centre than at the circumference; they are usually of an irregular figure, but some of them frequently assume a rhomboidal or diamond shape, being separated from one another by cracks and fissures, at the bottom of which may be seen the inflamed scalp, covered by a mealy powder, the detritus of the scabs; they are always more or less lamellated, and are usually about a line or two in thickness, being thinner at the circumference than at the centre, which is the part that is last of all separated from the scalp. They are loosened from the skin by being gradually pushed up by the growth of the hairs, the part that is farthest from the vertex being that which is first of all raised up, as has already been stated; the sides are then separated, and when the upper and middle parts are detached, the scab falls off, leaving the subjacent skin dry, glazed, and of a bright red colour. They occasionally present a depressed appearance in the centre, from their sides being curled up, but this is very different from the cupped shape of the crusts of favus. They are usually most numerous about the vertex, on the sides of the head, and about the ears. The hair, which is commonly dry, thin, and brittle, readily breaks off, but as it returns to its original strength and beauty, when the disease is cured, no permanent baldness is left."

The two forms, however, run into one another, more especially the moist into the dry.

Chronic eczema may last for a very long time, even for several years.

In the treatment of chronic eczema, after the scabs have been detached by poultices, local stimulants are necessary. For this purpose observes Mr. Erichsen, we may either employ the alkaline carbonates or sulphurets, or lotions and ointments containing metallic preparations; the former sufficing in the milder case, the latter being required when the disease has become more obstinate, in consequence of neglect or of injudicious treatment.

Lotions, containing either the pure alkalies, or their carbonates and sulphurets, will be found to be especially useful in cases of dry chronic eczema, after the scabs have been removed by poulticing, and the surface of the scalp been thoroughly cleansed. The quantity of the liquor potassæ, carbonate of potassa, or sulphuret of potassium, used, should vary from one to three drachms to a pint of water. If any inflammation be excited during the employment of these preparations, they must be discontinued until this be subdued.

If, however, the disease prove to be more rebellious, and especially if it be the moist chronic form of eczema, we must either substitute for, or al-



ternate with the employment of these means, an ointment made with some of the metallic preparations, such as the nitrate of silver, the iodide of sulphur, the bichloride, nitrate, or ammonio-chloride of mercury, or the sulphate of zinc, according to the degree of stimulation that the scalp will bear. The mode of employing these, that Mr. Erichsen has found to be most beneficial, is to apply the ointment, that we determine upon using, at night, ordering the patient to wash it off in the morning with a lotion composed of the sulphuret of potassium, then to re-apply the ointment, and in the course of six or eight hours to wash it off again; thus alternately re-applying and washing off the ointment at stated intervals during the four-and-twenty hours. This alternation of stimulus will prove to be exceedingly useful; but it will in general be found that, any one local application which, at first appears to be of great service, will, after a time, lose its effect and necessitate the employment of some other.

Our author objects to an oiled-skin cap. He prefers one of thin linen.

The *general treatment* must be regulated by circumstances, and in correspondence with the symptoms.

*Eczema Furfuracea*.—"This disease presents considerable variety of appearance, according to its extent and intensity. When slight and of but trivial extent, it appears in the form of a few thin scales of a yellowish-white or yellowish-grey colour, which are the remains of vesicles that have either shrunk without effusing their contents, or else have contained such a minute quantity of thin serum, that when it has dried up it has been insufficient to form a scab. These scales are sometimes placed upon the summits of small papillæ, the tops of which occasionally present a black appearance, in consequence of the drying of a minute quantity of blood that has been effused by the patient scratching himself. When the disease assumes this slight form, it would scarcely merit the attention of a medical man were it not frequently the forerunner of a more serious attack.

The more severe forms of the disease are usually preceded by a considerable degree of pruritus, with some tension and heat about the scalp; the epidermis then appears to separate itself into detached scales, which are often loosened by the patient scratching himself; after which a few small vesicles arise, from which a thin, serous, but rather glutinous fluid exudes, forming the scales into masses, and agglutinating them and the hairs together. These masses of scales and hair give a soft, yielding sensation to the finger when they are pressed upon, and if they be removed, we shall find the cutis underneath to be exposed and inflamed.

These scales vary in colour from nearly a pure white to an ash grey, yellowish-grey, yellowish-brown and brown, presenting, when of the latter hue, a very close resemblance to bran. The depth of colour depends more upon the quantity of fluid with which they are impregnated than on any other cause, as the same scales which are dark when moist, become light-coloured when dry.

This disease may be confined to patches on the scalp, or it may extend over the whole of the head, and even down upon the forehead; when extensive and of old-standing, the head evolves a disagreeable cheese-like odour. The hairs are never lost, but occasionally become thinner and lighter in colour. As the disease declines, the discharge dries up, and the scales fall off, separating the large quantities when the patient shakes or scratches his head, so that it is impossible for him to keep his clothes free from them, the pruritus ceases, the scalp gradually assuming its natural appearance." 63.

*Eczema Amiantacea*.—"This disease, which is a frequent consequence of the preceding one, is characterized by a mass of white, pearly scales, of different sizes, which adhere to and surround the roots of the hairs, matting them into

locks, and giving to the head a white, striated glistening appearance, which makes it resemble sufficiently closely dirty coarse amianthus or asbestos.

The symptoms of this disease vary according as to whether it comes on after an attack of the preceding affection, or whether it occurs in an acute form, presenting from the very onset its asbestiform appearance.

In the former case, the scales of *eczema furfuracea* gradually become more numerous, and are collected into thicker masses, which by drying on the surface present that peculiar grey, pearly appearance which is so characteristic of the disease, the deeper layers, however, retaining their soft glutinous feel. In the mass which is thus formed by an agglomeration of hairs, of serous discharge, and of scales, the individual hairs cannot be discerned, as they are collected into bundles, which may again be subdivided into smaller ones, but which it is impossible to resolve into the separate hairs that compose them. When these locks are cut off, and the scales removed by poulticing, the scalp will be seen to be of a vivid red, and to pour out the serous discharge that binds the hairs together." 64.

We confess that we see little advantage, but rather the reverse, in separating *eczema furfuracea* and *eczema amiantacea*. It is this disposition to give names and individual descriptions to affections that constantly run into one another, and differ only in some trivial point, that has contributed, we think, to keep back the amount of useful general information on the subject of cutaneous complaints.

These diseases may last weeks or years. "When *eczema furfuracea* commences in infancy, it usually disappears about the period of puberty, but it may continue after that time of life; when this is the case it assumes a very obstinate character. *Eczema amiantacea* is always a very chronic complaint, and one that is with difficulty influenced by any mode of treatment."

Stimulating lotions of various sorts have been employed, with indifferent success, in the treatment of these disorders. Mr. E. lauds the solution of the nitrate of silver, in the proportion of a scruple or half a drachm to the ounce of water, pencilled over the scalp every second day.

*Herpes*.—After a description of *herpes circinnatus*, the "ringworm" of the public, an affection neither contagious, nor communicable by inoculation, Mr. Erichsen touches on the necessity of its diagnosis, and points out the features of it. The disease may be distinguished from all other affections of the scalp by the circular or oval figure that its patches assume, and by the vesicles being placed exclusively on the circumference of the ring, leaving the centre free. These characters will prevent its being confounded with *eczema*, which disease never appears in patches of an oval or circular form.

From *favus*, the true ringworm of the scalp, there can be no difficulty in distinguishing this disease at a glance. For although they both assume a circular form, yet *herpes circinnatus* is a vesicular disease, with thin small scales, and without any tendency to occasion a permanent loss of hair; whilst *favus*, on the other hand, is a tubercular affection, with yellowish-grey crusts, and is usually attended or followed by a permanent destruction of the hair-bulbs, being altogether a much more severe disease. Its vesicular characters are sufficient to prevent its being mistaken for any of the *impetiginous* affections of the scalp. *Lepra*, in its decline, might

at first be confounded with it, but this is a squamous disease, and moreover, seldom, if ever, occurs in single patches, so that any doubt that might arise from the appearance of one circle, might easily be cleared up by seeing others in different stages on other parts of the body.

Speaking of herpes zoster, and its abrupt termination at the median line, Mr. Erichsen offers an hypothesis to account for that curious circumstance.

"The occurrence of herpes zoster on one side of the body only, and its abrupt termination at the median line, can, I think, only be explained on the supposition that the nerves of the region affected exert a direct influence upon the disease. In support of this opinion it will be found that herpes zoster always follows the course of the nerves of the part on which it occurs; thus, when it is seated on the trunk it almost invariably curves downwards and forwards in the very direction of the intercostal nerves, and several cases have fallen under my observation in which it has occurred in the precise course of the sciatic nerve. This view of the nature of the disease is strengthened, when we take into consideration the severe neuralgic pain that is so commonly left on its disappearance, and which clearly indicates some local morbid condition of the functions of the nerves. Its abrupt cessation at the median line also resembles what takes place in some nervous diseases, a hemiplegia for instance. On taking all these circumstances into consideration, it is, I think, impossible not to come to the conclusion that herpes zoster is essentially connected with some local derangement of the nerves of the part affected." 77.

#### PUSTULAR DISEASES OF THE SCALP.

Under this head Mr. Erichsen ranks *impetigo* only. *Favus* he places under a different order.

*Impetigo*.—This is extremely common on the scalp. It comprises three species, viz. *impetigo sparsa* [the *porrigo favosa* of Willan;] *impetigo granulata* (the *tinea* or *porrigo granulata*); and *impetigo eczematosa* (the *porrigo* or *impetigo larvalis*): the first being characterized by *pyodracious*, the last two by *achorous* pustules, and differing besides from one another in some very important respects.

*Impetigo Sparsa*.—Mr. Erichsen gives a good account of the symptoms of this affection. "The appearance," he says, "of pustules in this disease is preceded by an erythematous blush and by a considerable degree of tingling and itching, which is sometimes very intense and distressing to the patient. After the lapse of a few hours a number of elevated points appear on the inflamed skin; these, which are at first very smooth and shining, soon become converted into pustules, which may be either scattered singly upon the scalp or distributed here and there in small groups. These pustules vary considerably in size from that of millet-seed to a split-pea, partaking in the latter case of the characters of phlyzacia; but in general they are small and appear seated in the structure of the cutis, and not upon it; they are usually most numerous about the posterior part of the head and vertex. The itching and tingling are but little if at all diminished on their evolution, in fact, in some cases, they appear to be

increased, and the erythematous blush that preceded them continues of the same intensity as before.

In from forty-eight to sixty hours after their formation, these pustules give way and shed their contents upon the surface of the scalp, where, concreting rapidly, they form thick irregular scabs, of a yellowish-green or yellowish-brown colour, semi-transparent, and having a varnished glistening surface, which causes them to resemble very closely masses of impure gum-arabic or of dried honey. As the oozing of pus continues, these scabs increase in thickness and gradually acquire a rounded, mamillated, or stalactitical form. They are adherent to the scalp, and are usually traversed by several hairs that have been entangled in them. After a time they crack, becoming dry and friable at the edges where they assume a light yellowish-grey colour, and an opaque appearance, and gradually crumble away. By the continuance of the discharge and the rapid concretion of the effused fluid, large masses of them soon form, which, uniting together, give rise to continuous incrustations, around which, pustules may frequently be observed in all the stages of their progress."

Serum or even pus may be poured out in the subcutaneous cellular tissue, and the lymphatic glands often swell, but seldom suppurate. When the complaint is on the decline, the formation of pustules ceases, the scabs already formed separate in an irregular manner, and are either not reproduced at all, or if so, not to the same extent as before. The surface, that is exposed by their falling off, will be seen to be red and shining, deprived more or less of hair, and covered by a thin glistening cuticle, which soon, however, becomes thicker and stronger. Any baldness that may be left by this disease is only temporary.

*Impetigo Granula'a* commences "by the eruption of a number of small isolated, achorous pustules, of a light yellow colour, which are usually scattered irregularly upon the surface of the scalp, and not congregated in clusters; each pustule being traversed by one or two hairs. The fluid contained in them is not thick and glutinous, but, on the contrary, is rather thin and light coloured, drying with great rapidity; in these respects it differs very materially from the discharge of *impetigo sparsa*, which is thick and viscid, solidifying very slowly, and having all the characters of laudable pus. By its desiccation it gives rise to irregularly shaped, hard scabs, each of which is traversed by a hair: these, which are at first small, give a rough and rugged feel to the part of the scalp affected, but they quickly increase in size by the additions they receive from below. When once formed, they soon become detached, and are lifted off the scalp by the growth of the hairs which pass through them, and to which they are firmly adherent, appearing as it were strung upon them; they then dry, and sometimes become excessively hard, like grains of sand. The same process taking place again and again, each hair will be found to have several small scabs fixed upon it, at intervals of a line or two from one another. The colour of these scabs, which is a dirty greyish-white, passing into yellowish-grey and greyish-brown, has caused them to be compared, not inaptly, to pieces of old mortar, or of dirtied plaster; some of them also resemble, very closely, dried crumbs of bread. They are very irregular in their shape, but usually approach to a round or square figure.

The hair sometimes becomes light coloured, coarse, and woolly, on the affected parts; as the bulbs however are not implicated, this change is not permanent."

The odour is exceedingly disgusting, and pediculi swarm to an amazing extent amongst and around the scabs.

*Impetigo Eczematosa* appears after much redness, tingling, and itching of the scalp. "A number of achorous pustules, of a yellowish-white colour, and closely set together, then make their appearance; they are usually intermixed with a few vesicles, the contents of which however soon become opalescent and milky, and, in the course of twenty-four hours, purulent; but some of them occasionally remain unchanged until they are either ruptured by the patient scratching himself, or give way naturally. The eruption may occur in any part of the scalp, but its seat of election appears most frequently to be about the forepart of the head and temples.

The fluid that is effused on the rupture of these pustules is thick, viscid, and of a yellow or yellowish-green colour, very tenacious, glueing the hair together into masses, which have a soft, moist appearance, as they do not dry perfectly. When the pustules have once given way, small deep depressions are left, from which a viscid, semi-transparent secretion continues to ooze, without, however, the evolution of any fresh eruption; sometimes when this is very abundant it appears amongst the hairs in the form of drops, somewhat resembling impure honey.

Scabs are first formed on those parts of the head that are not covered by hair, as the forehead and temples, whence they may gradually extend themselves over the whole of the scalp or a great part of the face. These which are, in their earlier stages, thin and somewhat lamellar, soon acquire, from the constant additions they receive from the discharge that drains from a number of points, a thick and rugged appearance, and being of a yellow or yellowish-brown colour, semi-transparent and shining on the surface, they resemble, sufficiently closely, dried honey, or pieces of yellow wax." Pediculi are apt to form. The hair is not permanently lost. Pruritus is greater in this than in any other affection of the scalp.

Mr. Erichsen gives an account of *impetigo eczematosa* of the face, which we do not think it necessary to notice. Age, he remarks, influences *impetigo* considerably. *Impetigo eczematosa* is more generally met with before the second or third year than at any subsequent period, whilst *impetigo granulata* and *impetigo sparsa* almost always occur after that age, namely, between the fourth and the seventh or eighth years, but rarely later than this. Temperament and habit of body, too, exert a great effect. *Impetigo eczematosa* and *impetigo sparsa* are most commonly met with in children of a lymphatic, lymphatico-sanguine, or sanguine temperament, who are frequently remarkable for their beauty, and otherwise healthy appearance, having thin, delicate, fair skins, light hair, blue or grey eyes, and a ruddy complexion; whilst *impetigo granulata*, on the contrary, is most frequently seen in subjects of a melancholic or melancholico-nervous temperament, with dark complexion, hair, and eyes, and of a spare conformation.

Impetigo is more rife during the warm season of the year than at any other period, occasionally getting well during the Winter months to break out a fresh on the return or Spring or Summer; but when chronic, season loses its influence.

Over-feeding, as well as under-feeding, and improper feeding severally lead to the disease. So do the exanthemata.

The duration of impetigo may vary from weeks to months, and even years, impetigo granulata being by far its most rebellious form. When it has once occurred it is very liable to relapses from trivial causes. No cicatrices or permanent baldness are ever left by it.

Our author makes some observations on the treatment. If mild, and in a young child, nothing, perhaps beyond simple palliatives, will be advisable.

In a severer case, and in an older child, the first thing to be done is to remove the hair, which, as in eczema, may be accomplished more easily and with less irritation by means of a pair of curved blunt-pointed scissors, than with a razor. Then come fomentations and poultices, perhaps leeches, lancing of the gums, laxatives and so forth. The great thing is to avoid irritating.

When the case is chronic, the scalp must be cleared thoroughly of scabs, in order that more stimulating applications may be resorted to. Sulphureous lotions are essential service. The sulphuret of potassium, in the proportion of from one to three drachms to a pint of water, applied four or five times a day, will be found most useful in giving a more healthy tone to the diseased cutis.

At the same time that this lotion is applied externally, the sulphureous waters, either natural, as those of Harrowgate, or artificial, may be administered internally with good effect. Lotions of alum, of the sulphates of copper, or of zinc, of the nitrate of silver, or of the bichloride of mercury, have been employed, but they are inferior to that of the sulphuret of potassium. Sometimes the ung. hyd. nitratis is of service. For violent itching, Mr. Erichsen advises a lotion consisting of the oxyde of zinc, suspended in rose water, to which a few drops of hydrocyanic acid have been added. Mild purgatives must not be forgotten.

"The diluted nitric or nitromuriatic acids in doses of from two drachms to half an ounce in the course of the day, will be found of much service in the treatment of this disease, being more especially of use in allaying the pruritus. They may be given in barley water or gruel, or in the form of a sherbet, with sugar or some agreeable syrup, as that of orange-peel." 103.

This has not agreed with our experience at all, the mineral acids generally aggravating the pruritus excessively. Nor does the statement that follows tally any better with what we have seen.

"I have never met with any cases of impetigo of the scalp that did not yield to the judicious employment of the above plan of treatment, or that necessitated the use of arsenical preparations, or of those remedies that are usually looked upon as *specifics* in the treatment of the diseases of the skin." 103.

We venture to say that the majority of medical men *will* meet with

cases that *will not* yield to the above plan of management, which we consider rather meagre.

Circumscribed abscesses in the subcutaneous cellular tissue, and even deeper mischief may result from favus. The hair always becomes thin, dry, brittle, and frequently changed in colour, assuming a lighter hue than natural; but when the disease has not existed sufficiently long to destroy the bulbs, it will acquire its natural appearance and strength on a cure being effected; in some instances, however, the colour will be entirely lost, the hair becoming grey, and remaining so during the remainder of life. When the disease has gone on to the destruction of the bulbs, the hairs are of course never reproduced; the scalp therefore remains smooth, white, shining, and dry, and the part that is thus deprived of hair, will for ever afterwards be free from the disease itself, as with the destruction of the follicle, the seat of the affection, the disease itself must necessarily cease.

Favus dispersus has been met with on the face, nape of the neck, shoulders, extremities, and hands, nay, over the entire body, except the armpits and pubes, which, however general the disease may be, never become affected by it. On the scalp it is most obstinate.

#### *Favus Confertus.*

Favus confertus appears in the form of red circular patches, studded with a number of small yellow tubercles, which are, as in favus dispersus, depressed in the centre, and implanted as it were in the cutis. These, which are more numerous about the circumference of the patch than in its centre, are soon succeeded by crusts, which, although at first separate, and presenting the characteristic cupped shape, and circular outline, soon become confluent, and lose, to a certain degree, these characters, although they always retain a more or less round or oval form. They are always dry and friable, and at first of a yellowish colour, but this soon becomes greyish-yellow, and at last a dirty greyish-white, causing them to resemble, as Rayer justly observes, the crumbling mortar of a wall that is going to decay from age and moisture. When these scabs fall off, or are separated by poulticing, the skin under them will be seen to be red and shining, and fresh tubercles being speedily developed, a new succession of crusts takes place.

Favus confertus may spread in two ways. Either by the patches gradually extending their circumference by fresh evolutions of tubercles, which are succeeded by scabs, or else by new patches being formed, either by the patient, in scratching himself, inoculating other follicles with the favous matter, or else by the debris of the old scabs falling upon new places, and thus giving rise to a fresh eruption of the disease.

The hair is extensively affected, and, if baldness occurs, it is apt to be permanent. The clusters of this disease, increasing in size and number, soon unite by their margins, thus giving rise to large irregular patches, which sometimes occupy the whole of the vertex and fore-part of the scalp, usually leaving, however, as Willan observes, a border of hair round the head, unimpaired. When it has acquired this extent, the patient presents a remarkable appearance, the head being covered with a thick coating, as it were, of a dirty yellowish-grey or whitish plaster, which has

entirely lost the cupped shape of the individual crusts, only retaining round its borders remains of its circular outline, in the form of segments of circles, of a greater or less extent, which are usually well marked, and have a bold, sweeping appearance. When the scabs fall off, the subjacent cutis will, at some points, be seen to be red, shining and inflamed, whilst at others there will be bald, naked patches left, the hairs having been destroyed never to be reproduced.

In severe and chronic cases of the disease, the crusts will appear to be of a dirty white or greyish colour, friable, breaking readily into powder, with cracks and fissures in different directions, through which a thin, ichorous, fetid pus is exhaled, which is, however, perfectly distinct from favous matter, and is merely the produce of the inflamed skin. What little hair may still remain on the head will be thin, light-coloured, and woolly.

The patients in severe cases, generally present all the marks of cachexia.

In spite of what Alibert may say, there can be no doubt of the contagiousness, and that extreme, of Favus. And its hereditary character would seem to be decided. Poverty, filth, the scrofulous diathesis, predispose to it.

*Treatment.*—This must consist of local and of general measures.

The *local treatment* presents three indications, viz. :

1st. To clear the scalp of all scabs and crusts, and to attend scrupulously to cleanliness.

2d. To remove the hair from the diseased follicle.

3d. To set up a new action in the part affected.

The first indication is readily fulfilled by the application of poultices continued for two or three days, or by means of lotions containing the diluted hydrochloric acid in the proportion of an ounce to the pint of water, after the hair has been cut short. Either of these means will suffice for the object in view, but the poultices are preferable, as they are always most convenient in their application and most speedy in their action. If, however, the crusts be very thick, they may first of all be loosened by the acid lotion, which acts by dissolving out their earthy parts, and then be separated by means of a large, thick, and soft bread or linseed meal poultice, which will effectually clear the scalp. In the course of the treatment, cleanliness must be attended to by washing the head at least once a day with soap and water.

Unless the second indication is fulfilled, and the hairs are removed, no good can be effected. The old pitchcap is, happily, burnt, and even Plumbe's forceps have gone to rust. The depilatory of the Messrs. Mahon has superseded them, and although the composition is kept secret, and the remedy, therefore, a quack one, still it must be owned to be successful. Perhaps many of our readers are not acquainted with it. We shall therefore give our author's account of it. "They begin their treatment by cutting the hair at a distance of two inches from the scalp; the scabs are then removed by means of emollient applications and of poultices, and the skin freed from all impurities by means of soap and water. After this has been repeated for several days in succession, an ointment com-



posed of lard and a depilatory powder, the composition of which is kept secret, is rubbed in every second day on the parts that are affected. A fine comb is then passed through the hair on the days on which this preparation is not used, and thus the hair is got rid of gradually and slowly, but without pain. After this plan has been continued for a few weeks, a small quantity of the powder is scattered through the hair, and the combing proceeded with. This is persevered in, according to the severity of the disease, for a longer or a shorter period, and has been found to succeed when every other mode of treatment has failed. It causes no pain, is devoid of danger, and does not prevent the hair from growing, provided the bulbs have not been destroyed. The composition of the ointment and powder is kept a secret, but according to Chevalier, who has analysed them they consist of slaked lime partly carbonated, of a little silica, alumina, and oxide of iron (probably impurities in the lime), and of subcarbonate of potass; their activity evidently depending upon the lime and subcarbonate of potass they contain.

"For the ointment\* of Mahon we may substitute one composed of 3j of carbonate of potass to 3j of lard, or else a lotion containing 3ij to 3iij of the same salt to 3vj of water, either of which, if used in the way recommended by Mahon, will be found to act as mild and sure depilatories." 155.

Countless, almost, are the means recommended for carrying out the third indication, and setting up a new action in the scalp. Of all the applications, the iodide of sulphur, the sulphuret of potassium, and the carbonate of potass are incomparably the best. The former should be employed in the proportion of ten grains, or a scruple, to the ounce of lard. If the ointment be of a greater strength than this, it will be very apt to give rise to an eczematous affection of the scalp, by irritating it too powerfully; it may be used twice a day. Active as this preparation undoubtedly is, it occasionally fails, especially in chronic cases of the disease occurring in a scrofulous subject. We confess that we have seen no local application comparable to this.

"The sulphuret of potassium, in the form of lotion, is especially of service in removing that scurfy condition of the scalp that is left after the removal of the scabs.

Lotions of the carbonate of potass are also most useful, as they possess the double advantage of removing the hairs from the diseased follicles, at the same time that they excite the vessels of the scalp to a new and a more healthful action.

When favus occurs on the extremities or trunk, in the form of a few small tubercles only, it may most effectually be got rid of by cauterization with the nitrate of silver, or the strong mineral acids." 157.

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- \* "M. Petel recommends the subjoined ointment and powder :

Soda (of commerce)	. . . . .	60 parts
Slaked lime	. . . . .	4
Lard	. . . . .	120

Mix together for the ointment.

Quicklime	. . . . .	120 parts
Powdered charcoal	. . . . .	8

Mix for the powder."

We are glad to perceive that Mr. Erichsen advises the gentlest means. We cordially concur with him.

*General Treatment.*—On this Mr. Erichsen says little. When the disease arises spontaneously in a cachectic habit, *that* must be treated as the tubercular cachexia. Mr. E. lauds highly the iodide of iron. It may most conveniently be given to children in half-grain or grain doses, twice a day, in a tea-spoonful of simple syrup, which, at the same time that it conceals its taste, prevents its decomposition. Next to the iodide the ammonio-tartrate of iron, in doses of from two to five grains, will be found of most service, especially if given in combination with infusion of calumba, or the compound decoction of aloes, which, although not a very chemical mixture, is a very useful one. These preparations should, however, only be employed when the disease is ingrafted on a weak, scrofulous constitution, and are not called for when it occurs from contagion in a healthy subject. If any excitement supervene during their use, if the tongue should become dry and glazed, or red at the tip and margin, and the skin hot, they must immediately be discontinued, and a few doses of mercury and chalk, or of rhubarb and soda administered, so as to lessen the irritation.

And Mr. Erichsen concludes that, by attention to cleanliness and pursuing the plan of treatment recommended, there are few cases of favus that will not speedily be cured.

#### SQUAMOUS DISEASES.

Psoriasis and lepra *may* affect the head, but rarely unless they are present on other parts of the body. *Pityriasis* is more strictly a scalp disease. We perceive nothing in Mr. Erichsen's account of this affection to detain us. The following is his method of treatment. In children, he says, slightly stimulating washes, spirit or zinc lotions, with the daily use of a small-toothed comb, and a soft brush, will in general suffice; but when the disease is more chronic, especially when occurring in advanced life, we must have recourse to more active measures. In these cases, lotions of the sulphuret of potassium will be found exceedingly useful, more particularly if conjoined with the use of the ointment of the white precipitate of calamine, or of the oxide of zinc; the Harrowgate, or other sulphureous waters being at the same time taken internally, and due attention paid to the state of the secretions, especially those of the liver and alimentary canal.

The head should be washed daily with soap and water, and the scales removed with a soft brush, the hair being at the same time cut very short. Mild measures of this description, carried on with patience and perseverance, will seldom fail in effecting a cure, which is in many cases retarded by the employment of irritating ointments and stimulating lotions.

#### *Alopecia.*

Alopecia may either be a primary affection of the hair-bulbs, being unconnected with any other lesion, or it may be secondary, being the se-

quela of some other disease, whether vesicular, pustular, or tubercular, of the scalp. It may be general or partial, slow or rapid in its progress. It is most frequent in the old, an effect of age; whilst, in early life, it is a consequence of some abnormal condition of the hair-bulbs. It is much more common in men than women.

Primary alopecia is of three kinds:

1st. That dependent upon atony or atrophy of the hair-bulbs.

2d. *Alopecia folliculosa*, depending upon a morbid condition of the hair-follicles. The *trigne tondante* of Mahon and Rayer.

3d. *Alopecia circumscripta*,—the *porrigo decalvans* of Willan.

"1. Alopecia, depending upon atony or atrophy of the secreting organs of the hairs, may arise from various causes. Old age, any circumstance that debilitates the system generally, as long-protracted illness, phthisis, dyspepsia, profuse discharges, venereal excesses, over-study, the depressing passions, fevers of a low type, and in fact anything that lowers the vital energies, thus influencing more especially the activity of the extreme parts of the body, may occasion it. Long-continued pressure, as from a military cap or helmet, may also give rise to it. In some rare instances there appears to have been a congenital atony of the hair-bulbs, not only of the scalp but of the body generally; the surface being entirely destitute of hair, and only furnished with a light down. Rayer and Cullerier both cite instances of this description.

Syphilis, and the abuse of mercurials, have been said by some to give rise to alopecia, but this is probably erroneous, and is founded on popular opinion, the cases related being by no means unequivocal, but appearing rather to be the accidental complication of this disease with syphilis, than a consequence of that affection." 184.

We think that they who have seen much of syphilis will not doubt its giving rise to alopecia. Partial loss of the hair is very common in connexion with secondary symptoms, and sometimes the alopecia is very extensive indeed. We have seen the head, face, eyebrows, pubes stripped of hair, or only covered with a sort of down. And this is too frequent an occurrence to admit of its being looked on as merely a coincidence.

In these cases there is more or less of an atonic or atrophied condition of the hair-bulbs.

#### *Alopecia Folliculosa.*

This rare affection "is characterized," says our author, "by the presence of circular or oval patches of variable extent, somewhat elevated above the surface of the surrounding scalp, and of a greyish, pink, or dull purple colour; thickly studded with a number of small papillæ, that give a rather rough feel to the part affected, the hairs covering which, are always broken off at a distance of two or three lines from the surface of the skin.

This disease makes its appearance, in the first instance, in the form of a small, greyish, scurfy patch on the scalp, a line or two in diameter, but which may enlarge to the size of the palm of the hand, or even extend over the greater part of the head. On a cursory inspection, the patch appears to be bald, but when examined more closely it will be found to be covered with hairs two or three lines in length. It is always of a pretty regularly circular or oval figure, and in some instances appears as if made up of two

or more circles joined together. Its colour is uniformly a greyish-pink, or dull purple, and it is somewhat elevated above the surrounding skin. Its surface, which is rough, dry, and rather hard, is evidently deprived of those oily or sebaceous secretions that serve to soften the scalp when in a healthy condition, and is covered by a number of papillæ, which, being closely set, give it very much the appearance of a portion of the integument of the leg of the fowl. In consequence of the close arrangement of these papillar bodies the skin has a very dense and compact appearance, and when it is raised up between the fingers it feels as if hypertrophied, being both thicker and firmer to the touch than natural. The surface of the diseased patch is covered by a number of very thin, fine, small scales, of a light-brownish or silver-grey colour. These, from their minute size and light colour, occasionally give it a mealy appearance. This is more particularly the case with the smaller patches.

The causes of this affection are very obscure ; it occurs chiefly in children, and appears sometimes to be contagious, but of this we have no direct evidence."

Mr. Erichsen agrees with Mahon in placing the disease in the sebaceous follicles of the scalp. He thinks it probable that the sebaceous matter is accumulated in the orifice of the follicle, where it undergoes some change becoming harder and firmer by the absorption of its more oily parts, and that it is this collection in the follicle that gives rise to a small, prominent tumour; a number of which being situated close together, will cause the skin to assume the close papillar arrangement that is so characteristic of the disease. That it is seated in the sebaceous follicle is rendered still more probable, by the remarkable dryness that the affected part of the scalp presents, which can only be accounted for by the absence of the oily secretion that it is the office of these organs to pour out; and it is probably owing to the same cause that the hairs become fragile and break off.

On *Alopecia Circumscripta*, the *Porrigo Decalvans* of Willan, our author communicates nothing new, save that according to Cazenave, an epidemic alopecia of this description made its appearance in most of the schools in Paris in the year 1839. It was not preceded by any pustule or vesicle, and occurred in different parts of the town much about the same time; there was no evidence of its being of a contagious nature.

With regard to *treatment* Mr. Erichsen observes that when "loss of hair depends upon mere atony of these organs, there being no inflammation or ulceration of them, as when it is the effect of low fevers, chronic diseases, such as dyspepsia and other similar complaints, stimulating washes or ointments may be of service, as soon as the morbid state of the system is rectified; for until this be accomplished, either no good effect will follow their application, or it will only be temporary. For this purpose stimulating lotions and embrocations, containing the essential oils of rosemary, thyme, lavender, mace, or turpentine, infusions of walnut-leaves and of mustard, and alcoholic washes, have been recommended. Willis has seen the mercurial ointment of service in some cases. Dr. Thomson recommends a lotion composed of alcohol and spirits of turpentine, and Copland an ointment of the balsam of Peru and oil of lavender. Others

have advised the application of solutions of the sulphates of copper or of zinc in alcohol, or of the nitrate of silver, of the tinctures of capsicum and of cantharides; in fact, anything that stimulates the scalp may be of service. I have occasionally seen the infusion of tobacco, as recommended by Zacutus Lusitanus, succeed when other means have failed; but I have found nothing more useful than the continual shaving of the head, until the hair assumes its natural strength and colour. At the same time that this is being done, any stimulating applications, more particularly those recommended by Drs. Thomson and Copland, may excite the piliferous bulbs to increased action. When alopecia is dependent upon, or connected with, any chronic disease, that may lower the energies of the system generally, we cannot hope for a permanent cure until this be remedied, and the health of the patient restored. These remarks apply to alopecia circumscripta as well as to that form of baldness that arises from simple atony of the hair-bulbs.

Alopecia folliculosa is a most rebellious affection, and one that will resist all the above plans of treatment. The chief object appears to be to stimulate the sebaceous follicles, so as to cause them to discharge the morbid secretion that is accumulated in them. For this purpose I employed, in the two cases already mentioned, the ointments of the iodide of sulphur, and of the nitrate of mercury, with some success. But yet I cannot speak confidently of any mode of treatment, nor can I find any recommended by others."

This concludes the work of which we have given a pretty full account. Its copiousness indeed is not so much on account of the absolute novelty of what the work contains, as because the descriptions of the diseases of the scalp are concise, accurate, and clear, and calculated to dispel an ignorance on their nature and treatment too prevalent in the profession.

We must confess that, as plain practical men, there seems to us too great an anxiety to distinguish varieties of the great forms of cutaneous disease. Look for example, at the named forms of herpes. Their treatment is very similar, and the great difficulty, in most instances, is to tell what the *name* of the disease is. If it were a mere matter of perplexity it would not signify. But whilst we are running after the shadow, we are like to lose the substance; and when the object of our studies is to invent or to apply a designation to a disorder, we may not improbably fail to attain satisfactory and comprehensive views of its treatment. We think then that the great desideratum in describing cutaneous disease, is to simplify and reduce to general formulæ, rather than to extend and individualise. To take again the case of herpes. We believe that he will treat it best, who is acquainted with the leading characters of the eruption, and the state of system that it is connected with; while it is very possible to christen every variety with scrupulous accuracy, and, attempting to suit a different treatment to each name, to miss the general principle that should govern all.

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## DISEASES OF THE URINARY ORGANS.

- I. TRAITE PRATIQUE SUR LES MALADIES DES ORGANES GENITO-URINAIRES. Par le Docteur *Civiale*. Tom. 3, pp. 1438, 8vo. Paris, 1837—42.

A Practical Treatise upon the Diseases of the Genito-urinary Organs. By Dr. *Civiale*. 3 vols. 8vo.  
[Concluded from last Number.]

- II. LECTURES ON THE DISEASES OF THE URINARY ORGANS. By Sir *Benjamin C. Brodie*, Bart. Serjeant Surgeon to the Queen. Third Edition.

## II.—DISEASES OF THE NECK OF THE BLADDER.

M. CIVIALE observes that the diseases of the neck and body of the bladder have been confounded together; but, in fact, in by far the greater proportion of diseased states, it is the neck which is exclusively affected, and the body becomes so usually only secondarily. This part is liable to functional or vital lesions, as well as to those of organic character; and although, strictly speaking, perhaps, such distinction should not be made, yet, practically, it is required, and although the two classes of phenomena may become combined, and mutually influence each other, yet at other times they may exist independently.

CHAP. I.—*Neuralgia of the Neck of the Bladder.*

The sensibility and contractility of the neck of the bladder are intimately connected, and the augmentation of the one produces that of the other. Until quite recently the most obscure ideas have prevailed upon these subjects, and even in 1834, it was objected, that so sensible a surface as the interior of the bladder would not allow the injection of tepid water as a preliminary to lithotomy. The relative strength of the expulsive and resisting powers of the bladder, seated at its body and neck, vary in different individuals, and their derangement, in the various affections of the part, becomes the source of all the functional ills of the organ. In endeavouring to ascertain the extent of sensibility of the bladder, experimenters have confounded it with that of the urethra: but, after the vesical orifice of the urethra has been traversed, which occasions a sense of burning and a desire to urinate, it will be found that no pain is excited by bringing the instrument in contact with the walls of the bladder, providing this movement be not rough or sudden. Indeed, as long as the mucous membrane continues healthy, even in cases of stone, pain is felt only by the patient when finishing the evacuation of the organ, the parietes of the bladder being then applied with force to the stone, driving it towards the orifice of the urethra. Many patients, who have suffered acutely from a small stone lodging at the neck of the bladder, have believed themselves cured when the catheter has driven the calculus into the body of the organ. The finger, passed into the bladder after cystotomy, causes pain only when it approaches the urethral orifice. The

same fact is observed in cases of vesico-vaginal fistulæ and excessive dilatation of the urethra in women. But, although mere contact does not produce pain, pressure does. In its pathological condition the sensibility of the bladder becomes anormally acute, although its degrees and mode of manifestation vary infinitely, its effects being both general and local. But it is still at the neck, in the vicinity of the urethra, that the excess of sensibility is chiefly perceived.

Of all the sympathetic influences arising in these cases, that exerted on the cerebral organs is most manifest. Whether the lesion at the neck of the bladder be organic or not, almost every patient finds himself under the influence of a severe mental impression, giving rise to melancholy, and despair, while the increased frequency of the desire to urinate in proportion as the mind is turned to the subject, is well known. A habit of emptying the bladder when it contains but little urine, and a consequent state of irritability of the organ is thus generated.

*Varieties of Neuralgia.*—(a) *Simple Cases.*—In these the malady at present is entirely local, as manifested by pain and uneasiness about the pubes and perineum, frequent desire to urinate, &c. The duration of the symptoms is variable, coming on usually in uncertain, but sometimes in periodical paroxysms. The intervals of ease become shorter, and the pain more severe and often extending to the hypogastrium, umbilicus, thighs, or even soles of the feet—its principal seat however, being at the pubes or sacrum.

(b) *Severe Cases.*—The simple case may have become only partially relieved by the means adopted, and an abiding state of suffering may continue, unaccounted for by the presence of any organic lesion. It is easy for the inexperienced to imagine a stricture exists here, and errors are frequently committed. Occasionally there is very little suffering in the genito-urinary organs themselves, but severe pain is felt in other parts of the body, especially at the umbilicus. Some of the cases are of an incurable obstinacy, and, although we may palliate them, we must not be persuaded to carry our endeavours at the cure too far. Many patients suffer principally or solely when subjected to the heat of bed at night, and may prevent their own cure by their impatience, and their having recourse to capricious modes of treatment.

(c) *Complicated Cases.*—As the disease is usually subjected to empirical treatment, we seldom meet with it in its simplest state; but, when it becomes complicated with other affections, the neuralgia must be considered only as an accessory, exerting, however, great influence over the primary disease. Thus, *Stricture* is frequently so complicated; but, in the great majority of cases, the neuralgia disappears as the stricture is relieved. In these cases the difficulty of voiding urine is out of all proportion great, when compared with the extent of stricture, and great morbid sensibility sometimes remains after the latter is cured. Neuralgia is frequently combined with a rigid condition of the urethra; also with an induration of the glans penis, accompanied with slight stricture, and easily relieved by an incision of the orifice of the urethra. Affections of the prostate, fungi at the neck of the bladder, severe lesions of the walls of the bladder, are frequently accompanied with neuralgia, as consequence, certainly, but yet demanding relief, before the primary

malady can be attacked. Some of these cases seem incurable, while others cure themselves after all attempts at treating them are abandoned, and in all, palliation is to be obtained. *Calculus affections* are usually complicated with neuralgia: but it is surprising that with a foreign body irritating the neck of the bladder, the symptoms are not more constant, and are capable of even temporary relief. In another work the author has shown how much the presence of neuralgia favours the production of gravel. The symptoms of mere neuralgia are so easily confounded with those of calculus, that Civiale has numbers of patients who apply to him under the erroneous belief of having a stone in the bladder. Even with the aid of careful exploration, excellent practitioners have committed grave errors. The occurrence of neuralgia after lithotomy, sometimes gives rise to a fear of the reproduction of the disease. When the bladder is *hypertrophied* the neuralgic symptoms bear a still greater resemblance to those of stone, and great difficulty in deciding as to the absence of a calculus, exists, even when the injected bladder is examined. *Atrophy* of the bladder, occurring in feeble constitutions where there is a slow expulsion of urine, is frequently accompanied by neuralgia. The atony and neuralgia may exist independently of each other, but they are usually combined. We are often called to patients suffering from neuralgia, in whom, although there exists no organic lesion of the urinary apparatus, and the sufferings are comparatively slight, a *marked deterioration of the general health* is found to be present. A slight consecutive catarrh, accompanied with some atony of the bladder, is usually existing, the urethra is preternaturally sensible, and the urine high-coloured and fetid. These cases soon become very serious and require the most careful treatment. Diluent drinks, local baths, a prudent regimen, the wearing a suspensory, the administration of several glisters daily, and eventually the cautious introduction of the bougie and injection of the bladder, are the means to be adopted. Several months may be occupied in the treatment, which may be of a rather more stimulant character towards the end of the period. The least shock, by the injudicious use of instruments, conveyed to the system, will delay the cure, or even lead, at an advanced period of the disease, to dissolution.

*Causes of Neuralgia.*—The author does not consider the direct application of cold by injection or the douche, as one of these. The various causes producing spasm of the urethra, *e. g.* contusion, undue pressure, irritation within the rectum, &c. may produce neuralgia of the neck of the bladder, but a leading cause of the malady is *resistance to the desire of passing the urine*, occurring especially during journeys, &c. when persons predisposed to spasm are very liable to retention, and this neuralgia is by no means uncommon in persons who have suffered from attacks in other parts of the body. The abuse of coition, and masturbation have frequently produced it, and no cases are more serious and obstinate. All practitioners are aware of the ill effects of fæcal accumulations, and, thus, mere glysters have succeeded in removing the affection. Constipation, and hæmorrhoids, which are often mistaken for venereal vegetations, fissures of the anus, ascarides, or even a slight phlegmon of the extremity of the rectum, may exasperate the sensibility of the neck of the bladder.



*Influence of Age and Sex.*—Although it is chiefly among adults that these affections are found, they exist in the young and oftener still in the aged. In *children* the symptoms are so varied as seldom to be specially characterised, and they oftener cease of themselves rather than in consequence of treatment. In the *aged* they are usually confounded with the organic lesions found at this period of life, of which, indeed, they are usually but consecutive or complicatory. Although neuralgia of the neck of the bladder is far from uncommon in women, yet, as their modesty prevents an early application for treatment, we usually find some serious complication existing when called to them. It is often mistaken for an affection of the neck of the womb. The author has met with many cases of aged women, worn out by fatigue, labour, or misery, who suffered excessive pain during the passage of the urine, which was accompanied with catarrh of the bladder, and general deterioration of health. Palliation, by procuring a freer expulsion of urine, in all these cases will admit of.

*Treatment of Neuralgia.*—The distinction of two classes of cases, the one dependent upon a mere exalted vitality of the parts, and the other arising from the structural changes, is to be borne in mind; for, although the neuralgia may become relieved by similar means in both instances, this is to be regarded as permanent in the one, but only as temporary in the other, as long as the original cause endures. In the *simple* cases, every or every other day, according to the degree of irritability of the patient, a bougie should be introduced into the urethra, for from five to ten minutes, removing it at once if it cause uneasiness, for the success of the practice depends upon the slowness and caution with which it is conducted. In others, besides the most simple cases, *injection* of the bladder will be required after the bougie has been employed for some time, commencing first with tepid and gradually arriving at cold water. Further observations upon this matter will be made when speaking of the atony of the bladder, the complication which renders injection necessary in neuralgia. *Douches*, applied to the various external parts of the pelvis are too much neglected. They may be formed at first by warm water, (mineral water is often very useful,) and afterwards by cold, and as the unpleasant feeling from their use arises from the water splashing on the neighbouring parts, these may be covered. They should be continued from ten to twenty-five minutes. Free action of the bowels, by glisters and mild laxatives, emollient drinks, and frequently the production of a pustular eruption are often desirable means. But all attempts to act through the bowels and skin have little effect, until we have modified the sensibility of the neck of the bladder by the bougie. The cure is sometimes very rapid, for passing a bougie two or three times has relieved many patients. The simplicity of this treatment induced the author to instruct his patients how to use the instrument; but he repented having done so, as they returned to him worse than they were, having been too rough in their manipulations. All attempts at hurrying on the case, or the substitution of the catheter, will be found fruitless. The patient's inattention to it, and other means of cure, together with his depression of mind, unwillingness to undergo the necessary examination, often delay the treatment and render him liable to exacerbation or relapse. *Al* men especially make bad patients, by reason of the mental tor-

ment they inflict upon themselves, and their tampering with the remedial means proposed. The circumstance of the difficulty of excreting the urine being so much under the influence of the mind increases their sufferings. Owing to the dislike which patients feel in applying concerning the maladies of the genito-urinary apparatus, the affection has often made serious inroads upon the health, under which circumstances, any slight shock to the system, as from a journey, change of diet, &c. will be sufficient to bring on an attack out of all proportion severe to the patient's apparent condition prior to its occurrence, and which must teach us to be careful in our prognosis, especially as the patient and friends will be too apt to attribute to the means we employ the effects which they observe. *Depletion*, when a phlegmasia has been supposed to be present, has sometimes been carried to an enormous extent, and although the author considers applying a few leeches to the loins and perineum may be sometimes useful, he condemns the application of 200 to 1000, which he has seen had recourse to. *Opiates* should only be used as a means of relieving pain or suffering, to favour the application of direct means of cure; but when injudiciously employed the disease may become masked and difficult of recognition in its various complications, which thus have time to develop themselves. Gout, rheumatism, and a variety of diseases, especially syphilis, have been in turn charged with the production of neuralgia, and then various remedies vaunted for its cure. The history of the patient's life is ransacked, and if ever he has during it suffered from syphilis, that is considered an explanation, which the prepossessions of the patient himself tend to render satisfactory. The consideration of the varying quantity and quality of the urine has also given rise to much empirical treatment, especially in England. The obstinacy of some cases has led to the employment of caustic, which, if carefully conducted, is unattended with danger. The author has frequently used it, but not until all other means have failed, sometimes with good results, but usually without any marked advantages. He applies it in the slightest possible manner, for when it is too boldly employed numerous and serious evils may result. The diet must be carefully attended to, the urine maintained in a fluid state by diluent drinks, atmospheric vicissitudes and long journeys forbid. While, as a general rule, abstinence from coition must be insisted on, a too long continence, on the other hand, has been found hurtful.—*Relapse*. Although in many cases it suffices to cure the disease without taking any subsequent precautions, save the avoidance of the primitive causes, yet, in others, we find the ailments reproduced without obvious cause, although usually in a diminished degree. We should therefore not discontinue our remedies at once, nor until some time after the apparent cure has occurred; and the tendency to relapse is so strong that it will sometimes occur in spite of every precaution.

#### CHAP. 2.—*Affections of the Vesiculæ Seminales and Ejaculatory Ducts.*

The obscurity of this subject, by reason of the difficulty of its diagnosis from various maladies of the vicinity, is well known. Neither the local symptoms or general disorders present signs sufficiently distinctive.

- 1, *Changes found after Death*.—The author conducts his post-mortem

examination of the genito-urinary organs as follows. Incisions on each side of the body are carried from the external margins of the abdominal ring, so as to meet each other at the posterior portion of the anus, and the pubes and ischium are to be divided in the same direction. The kidneys must be detached without dividing the ureters, and having made an incision through the intestine at the sacrum, the contents of the pelvis may easily be removed. Having placed the parts upon a table, the portions of the pubes and ischium which had been sawn through, are to be removed so as to expose the anterior part of the bladder, the upper surface of the prostate, and the deep portion of the urethra. A catheter is to be introduced, and having punctured the bladder at its fundus, an incision is to be extended through its body, neck, and the membranous portion of the urethra to the root of the corp. cavernos. The lateral and lower parts of the urethra must be left undivided, for it is here the chief alterations will be found, care being always taken at once to examine the orifices of the seminal canals. In many of the examinations which the author has made of persons who have died after retention, or other affection of the urinary organs, he has found great dilatation of these orifices, and that large quantities of pus issued upon pressure of the vesiculæ seminales. The changes in the vesiculæ are those usually found as the result of inflammation, leading to disorganization; it terminates sometimes by suppuration, but usually by induration or even ossification.

**2. Diagnosis**—This is full of obscurity, some coincident affection often masking by its gravity the primary one. A principal sign of the phlegmasia of these organs is a precipitate ejaculation of the semen either during coitus or dreaming, the fluid being expelled before the erection is complete, or even while the penis is flaccid. The same, however, may be the result of vicious habits, and some diseases of the testis or neck of the bladder; but when it occurs in an eminently nervous subject, and is reproduced very regularly, it usually arises from an affection of the vesiculæ. Another symptom, said to be diagnostic, is the sense of uneasiness, a painful yet vague description of fatigue, which accompanies or follows each emission, and which may continue hours or even days. This is also found in some affections of the prostate, and after the abuse of venereal pleasures, but not so distinctly as in the present case. Great changes also occur both in the quantity and composition of the fluids emitted. Some consider the superabundant discharge to be semen, and others as the production of the irritation of the prostatic portion of the urethra. In many of these patients, indeed, it is to be presumed, from their age, the prostate is affected, and small emissions are provoked by the slightest exertion, going to stool, &c.; but yet this must be considered as distinct from the constant running found in prostatic disease. When, however, the urethro-prostatic discharge is mixed with semen the case puts on a far graver aspect than when this is not the case, as the effect upon the general health is infinitely greater. Indeed, so serious do the secondary disorders then become, that the attention of the practitioner is diverted from the source of the mischief. Patients, in whom there is but a slight discharge, in whom the spermatic passages are but little affected, pollution occurring rarely, are often menaced by the most alarming deterioration of the general health,

their minds are utterly dejected, coition becomes impossible, and the semen is discharged without erection or sensation. These patients will be found, upon careful examination, to have been long liable to these small discharges, which, perhaps mixing with the urine, have not been attended to by them. In these affections we see the marked sympathy between the genital and cerebral organs: melancholy, often leading to suicide, takes possession of the patient, and partial tremours of the eyelids or hands, eventually converted into complete convulsions, are present, while, after death, some lesion of the encephalon is not unfrequently discovered.

3. *Causes.*—By reason of their position and relation to other organs these parts are liable to be influenced in a variety of manners, each of which impresses some special mark upon the affection, and exacts a variety of treatment. But authors have enumerated many circumstances which are of trifling or imaginary operation, and have overlooked others of real importance. Much importance has been attributed to *gonorrhœa* as producing the affection by a direct transmission of the inflammation, but upon no good grounds. Indirectly it may have some influence by the production of stricture, irritation of the neck of the bladder, &c. The ejaculatory ducts, opening just behind the narrowed portion of the urethra in *stricture*, may participate in the lesion, and this our author believes to be one of the most frequent causes of the affection. He considers various empirical means employed to procure the cessation of discharges of the urethra, as astringent injections, caustic, the rough use of instruments, &c. powerfully tend to the same end. *Irritation and inflammation of the prepuce and glans* also re-act upon the seminal vessels, and produce an altered or superabundant discharge, which becomes relieved as the phlegmonous state of the prepuce subsides. When the glans is reddened and indurated, the consequent lesion of the neck of the bladder is sometimes attended with an incurable discharge. The excitement to erection, which the irritation of the prepuce produces, causes a more frequent recurrence to coition, and at first an increased to be followed by a diminished secretion from the testis. The influence of a diseased state of the *prostate* cannot be doubted. Disease and irritation of the rectum it is well known produce irritation of all parts near the neck of the bladder. Many children are at first incited to masturbation by the irritation produced by ascarides, &c.; obstinate diarrhœa and irritating purgatives may have some influence also. Masturbation and excess of coition, especially if the patient have become addicted to these before the sexual system be fully developed, are frequent causes. Although these affections are frequently found to exist in members of the same family, the author does not consider their hereditary nature as at all established.

4. *Medical Treatment.*—Usually the most dominant symptom is attacked without any reference to the nature of the disease. The author considers its treatment can be best illustrated by dividing it into three different degrees. In the first, where there is too rapid emission followed by prostration, defective erection, and nocturnal pollution, the urethra will be often found preternaturally sensitive, and by relieving this cautiously by means of the bougie a cure of all the symptoms is sometimes obtained. But the

neuralgia here is much more obstinate than when it exists in a more simple state. The great object, and the great difficulty is to commence the treatment early, as the practitioner is not called in until the case has made too much progress. One reason that leads to delay is, that as within certain limits, exercise increases the activity of function of an organ, many young men, finding their virile powers only increased by coition, do not perceive, until too late, when they have arrived at excess, when the power becomes diminished, and the surgeon now first consulted, often finds a phlegmasia of the vesiculæ firmly established. Again, these patients, finding even after the power of erection has ceased, that frequent emissions occur from the irritation excited in the testis by the phlegmasia, attribute their condition to prolonged continence. When the affection arises from onanism its cure is yet more difficult. In the *second* degree, when the power of coition is entirely lost, and emission occurs without sensation, and is followed by excessive prostration, a mucous discharge flowing from the urethra, especially during stool, the treatment is more difficult. In these cases the removal of all causes of irritation from the rectum is highly desirable, and the production of easy evacuations by glysters advantageous, and all drastics are to be avoided. Ascarides not only infest the rectum, but may exist in the external organs of generation, especially in young girls, when they are often overlooked. The state of the urethra must be particularly examined, and its neuralgia, when present, carefully treated. The application of *caustic* to its deeper portions produces sometimes a cessation of symptoms which have resisted all treatment. But the urethra must have been well prepared, and its anormal sensibility diminished by the use of the bougie, and the application must be made in the slightest manner, when the re-action which always ensues will soon pass away. A month should elapse before the second application, and a third is rarely advisable. It is not to be used at all until all milder means have failed, some of which have been too much neglected, as *e. g.* frequent glysters of cold water, and the persevering use of the douche, &c. He does not think much of counter-irritation. The full *diet* the patient's sense of debility often induces him to take only adds to his distress; it should be of the mildest kind. The lying in hot beds, frequenting assemblies, neglect of rest, commerce with women, riding, &c. are to be prohibited. Pedestrian exercise is useful, and the engaging the patient in a regular train of study, which is rarely practicable, might be of advantage. *Tonics*, and especially iron, are useful in one class of cases, but in another in which the debility is merely consequent upon a phlegmasia not yet relieved, they are very hurtful. The preparations of *lead*, also sometimes useful, have often done harm from indiscriminate use. When all means have been fruitlessly tried, a *third* degree of the affection may be said to exist, in which desire itself becomes extinguished, and the patient is weighed down with the conviction of hopeless impotence; the mere state of inflammation is no longer to be combated, but a work of local destruction, accompanied by a shattered state of the general health, under which the patient may rapidly sink into one form of what has been called consumption.

5. *Hygienic Treatment.*—(1.) *In excessive Action of the Organs.* This, reducing a difficulty of ejaculation, and, by re-action on the testes the se-

creation of an irritating semen, is rarely original, but is usually provoked by masturbation or venereal excess, and then becomes amenable to treatment, providing the original error be detected, which it is often with difficulty, owing to the way in which its existence is pertinaciously denied. (2.) *In defective Action.* Excessive *continence* may give rise to evils analogous to those proceeding from an opposite cause. It may be practised after debauchery, and then the system suffers by reason of the suddenness of the change : or it may have always existed, as with Newton and Pascal, when evil may result from two modes. If a man, who has always been continent, suffers from vivid desires and frequent pollutions, the former will after a while become diminished in proportion as the latter are increased, and what was at first but a natural relief degenerates into a vicious habit, capable of leading to all the ill consequences of masturbation, and if the patient acquire the habit of emitting without pleasurable feeling he will not be enabled to perform the functions of a husband. But a man is in no better condition if his desires are feeble, and his night-emissions rare, for this shows an inactivity of the genital organs, which want of exercise only serves to increase. Such a man may boast of his continence, but this arises rather from the absence of desire than from his vanquishing it, and it may be questioned whether organs continuing so long in a condition of inactivity, will assume a requisite degree of vigour when required. As a practitioner gains his patient's confidence he frequently finds the abstinence from women arises from the presence of more or less impotence or the want of confidence in his virile powers, rather than from religious motives. A man in health feels invigorated after coition, and more fitted for mental and physical exertion, and whenever the act is followed by a feeling of melancholy or debility, inaptitude for exertion, and an irresistible desire for sleep, coition has usually exceeded its limits, and some one of the genital organs is suffering in consequence.—(3). *Determination of the Aptitude or Inaptitude for Marriage.*—This in these cases is often a delicate question : for, while in some cases, marriage, by removing the temptation to solitary enjoyment, and regulating the natural functions of the genital organs becomes the best means of cure ; in others, the excitement inseparable from the union of the sexes becomes hurtful, and may alone re-produce all the evils that treatment has relieved. With the genital organs, as with others, exercise fortifies, inaction enervates, excess diminishes and destroys their power. Thus, when they have become enfeebled by abuse, repose is their first essential, after which a gradual and moderate return to their natural excitement, proportionate to their renewed energy, is the rational course to recommend. In considering this subject it must be remembered, that virility and the development of the external organs are not necessarily proportionate. There are several accidental circumstances which are supposed to exert an influence upon the powers of the genital organs. Thus, a *dilatation of the spermatic veins* has been supposed to lead to sexual debility, and certainly the testes on that side may remain undeveloped, or become atrophied. *Malformation of the penis* also, by not only impeding congress, but by proving a source of irritation, re-acting on the testes and vesiculæ may produce the same debility. But such debility is often only coincident, and many men possess full energy in spite of the malformation. The genital organs are sometimes found

to continue in a *rudimentary state*, under the operation of some unknown cause, and the individual usually exhibits characters resembling those of opposite sex. A *disproportion* of size between the *glans* and the *body of the penis* demands notice. The latter may be long, flaccid, and pendant, while the former is dense and voluminous. This is rarely primitive, but usually arises from the abuse of coition or onanism, and it is very rare for these cases to be restored to their normal condition, especially if the testes have become soft and the scrotum relaxed, the erections continuing feeble and incomplete. The pressure of a badly-applied *truss* upon the cord has produced a diminution of the size of the testis. Several anomalous conditions of the *testicle* are observed. It may be knotted, tuberculous, soft and flabby, or entirely or partially indurated; the epididymis may be disproportionately large; the cord is sometimes lank and soft, and others hard and knotty. Very frequently these individuals are subjected to continued discharges, or involuntary emissions of a fluid very unlike semen; and they are usually little apt for the generative functions. The existence of *desires* on the part of the person has erroneously been supposed to be an index of his power of accomplishment. These are much more dependent upon the condition of the brain, than upon a state of repletion of the seminal reservoirs. These desires are often found to exist strongest as the procreative power diminishes. The mere existence of *erections* proves little; they may arise in some cases after the use of carriage exercise, hot baths, indulgence in hot, soft beds, &c. They may occur in morbid conditions of the bladder, as *e. g.* where the urine has been too long retained in neuralgia, usually subsiding when the bladder has been evacuated, but sometimes requiring cold to subdue them and permit the urine to pass. They are most obstinate towards morning. They are found too in old men and children. Morbid erection may also arise from the excitement produced by excessive coition: and when men above a certain age marry young women they frequently become liable to them from the excessive demands made upon their powers. These cases are easily distinguished from the natural erection as *ejaculation does not terminate them*, but they often become more prolonged in proportion as the act is repeated, and are frequently accompanied by a burning sensation. Patients, believing that renewed coition is the only remedy for the state of erection, are astonished when entire repose is prescribed. Reading lewd books, and frequenting the society of loose women, lead also to the production of erections which express no real want.

6. *Affections of the Genital Organs in Children.*—Even in very young children these are liable to augmented susceptibility and diseased conditions, the detection of which is rendered the more difficult, by reason of the want of development of the parts. Worms in the intestinal canal, and especially early masturbation are principal causes. This habit, at an early age, is the more to be dreaded because it does not result from the existence of a real want, but from a fatal precocity of the nervous system, and is hence chiefly manifested in delicate, excitable, nervous children, the development of whose intellect is dangerously premature. A considerable discharge often occurs in boys and in girls, and the habit of producing it may become incorrigible, but in some cases it is very slight and curable.

The excess of sensibility of the genitals which precedes the discharge is usually overlooked, and this latter is treated empirically, and if recognized at last, when alarming sympathetic maladies are engendered, it is usually too late. Cleanliness of the penis is too much neglected in children, and the accumulation of sebaceous matter under the prepuce, by the irritation it produces, causes the child, as one suffering from stone to pull the penis, and thus often leads to masturbation. When young persons arrive at puberty such irritation often produces sympathetic prostatic discharge, to relieve which effectually circumcision is sometimes required.

The treatment of these cases is more difficult than in the adult, as it is more tedious. The bougie and caustic are less efficacious here, and sometimes an instrument has to be retained for some time. The cold douches are useful, and the condition of the rectum requires especial attention.

7. *Affections of the Genital Apparatus in Women.*—Medical men are not often consulted directly upon this subject by women; but such cases are of frequent occurrence among young girls, young wives separated from their husbands, and widows. As the practitioner can only usually suspect evil practices, being debarred direct questions upon the subject, he has, too often, only to treat symptoms although the general health continues to fall away. Excessive coition will give rise to the same effect as onanism. Many women who practise these excesses are to be pitied rather than blamed, for in them an exaggerated and frequently a preternatural development of the genital organs is found, causing a continuance of the sexual desire in some also long after the period at which it is usually extinct. Still there are several examples in which the functions of the generative organs are unusually active unaccompanied by any proportionate development. With some women the same ill effects proceed from *continence*, and are at once removed by marriage.

#### CHAP. 3.—*Urethro-Prostatic Discharges.*

The mucous membrane of the urethra may become the seat at various points of a special phlegmasia, hardly frequently to be distinguished by its symptoms from neuralgia, but giving rise to a peculiar discharge. This, however, varies in quantity, colour, odour, and consistency—the linen with which it comes in contact seeming to have been gummed, the spots being of a reddish or bluish colour. Patients suffering from this discharge, when abundant, often observe a redness and constant humidity of the orifice of the urethra, and when not caused by external irritation, it is an index of chronic phlegmasia of the deep seated portion of the urethra and the vesiculæ seminales. The discharge may come on after unusual mental or corporeal exertion, excess of coition, the means used to arrest a gonorrhœa, or the too liberal use of fermented liquours, especially beer. Obstinate cutaneous eruption may co-exist, and disappear only with the discharge. Small calculi lodged in the deep-seated portion of the urethra, or between the prostate and rectum, by the irritation they cause, may keep up the discharge. Frequently, after death, great dilatation of the orifices of all the ducts opening into the urethra, and sometimes the development of little sacs in the canal are found. Affections of the rec-



tum play an important part, and thus hæmorrhoids in old men, often produce much urethral discharge, as also do affections of the womb. Too often it arises from organic changes in the neck of the bladder and prostate. If the discharge be not excessive it is not dangerous; some old men have, like women with leucorrhœa, suffered little else than an impediment to cleanliness for years. But, in many cases, the powers of the digestive organs give way, and excessive pain attends the expulsion of the urine. In treating the case we should search for the cause, and not treat the discharge in an exclusive manner.

#### CHAP. 4.—*Affections of the Veru-Montanum.*

The author cites several examples, derived from his own and others' experience, of organic change in this part. The symptoms are often severe but wanting in special character. The use of astringent injections or bougies, or the irritation arising from enlarged prostate, or a calculus have been produced as causes. Its exploration is difficult to the inexperienced, and its treatment, when advanced, should be that of tumour of the neck of the bladder.

#### CHAP. 5.—*Bridles at the Internal Urethral Orifice.*

A contraction of the vesical orifice of the urethra may exist in a membranous or cord-like form, raising the mucous membrane as a valve at its lower margin. It is usually placed at a short distance from the veru-montanum, with which it becomes confounded. The mucous membrane is of a violet colour, as if from a phlegmasia. If viewed from the bladder, prior to dividing the prostatic portion of the urethra, the valvular nature of the obstruction, sometimes nearly concealing the orifice, may be well seen. The symptoms are obscure, but a careful exploration, made at an early stage of the affection, before the prostate and other parts at the neck of the bladder become implicated, will reveal much. True stricture here is rare. When the diagnosis is clear, the bougie, sound, or caustic, or carefully directed incision may be employed, and for this last the author proposes an instrument in lieu of the one invented by Stafford.

#### CHAP. 6.—*Varices at the Neck of the Bladder.*

Although hæmaturia, retention, &c. have been attributed by some to the existence at the neck of the bladder, of a similar condition of the veins, to that which prevails in those of the rectum in hæmorrhoids, the author agrees with Shaw, that no such a state of these vessels prevails. A great distention of the capillary vessels of the bladder occurs from many causes of irritation.

### III.—DISEASES OF THE PROSTATE.

#### CHAP. 1.—*Enlarged Prostate.*

The author gives a long description of the various modes in which this may occur, which we have not space to follow. Suffice it to say, that it is rare in old age to find the gland in an exactly normal condition. It may be swollen generally, and then may reach extraordinary dimensions,

or the central portion, or lateral lobes, may become separately affected in every variety of extent.

*Effects (a) upon the Urethra.*—The mere tumefaction of the lateral lobes does not necessarily change the direction of the urethra, but the deprivation of the suppleness and elasticity, which belong to the urethral walls, sufficiently explain the difficulty the patient experiences in urining. When, however, these lobes are unequally swollen, or, when one only is affected, the canal becomes diverted from its normal direction, and the projection of the enlarged lobes into the bladder produces a distortion of the orifice. It is by the enlargement of the central portion that the greatest change in the urethra is effected, the deviation of the canal upwards varying in form, extent, and regularity. The increase of the gland also, by thrusting the neck of the bladder backward, and the membranous portion of the urethra forwards, increases the length of the prostatic portion of the canal. (b.) *Upon the Bladder.*—These occur in various modes, first, as to its capacity, affected not only by the volume of the gland projecting within the organ, which in some cases is enormous, but also by the contraction of the bladder its irritating presence produces. The form of the bladder is also much changed, a notable excavation, as it were, existing at the bas-fond; the various changes in this respect being only appreciable when the use of exploratory instruments is attempted. The functions are much disturbed. The expulsion of urine, even when the power is preserved, becomes very painful, and the organ itself very irritable. The spasmodic contractions are often dreadfully severe, and the contact of an instrument with the walls of the bladder gives rise to intense suffering, and sanguinolent urine, or even blood itself may follow the efforts made. After death, hypertrophy, accompanied with more or less phlegmasia of the mucous membrane, is found. In robust patients we find the state of hypertrophy and increased capacity of the bladder conjoined: but, in the feeble and exhausted, distention of the organ is caused by complete atony. (c.) *On the Kidneys.*—Inflammation and consequent abscess is frequently induced indirectly, by reason of the difficulty occurring in the expulsion of the urine. (d.) *On the Genitals.*—Most persons, suffering from chronic affection of the prostate, find procreation difficult. Usually there is a gradual diminution of desire, coition is performed with less and less frequency, attended with less pleasure, and is followed by distressing prostration. Sometimes the testes are soft, atrophied, and pendant, but at others, uniform and consistent; but in all cases usually very sensitive. The catheter, which is required to empty the bladder, keeps up the irritation in these organs, and the case often becomes incurable. Many castrations have been improperly performed under the idea of special disease of the testes existing. In many cases this organ may regain its usual size, and all tenderness cease, but there still remains deep-seated pelvic pain and general uneasiness, due, probably, to an affection of the vesiculæ seminales.

*Diagnosis.*—The *symptoms* assist us but little. The affection may have existed a considerable time without being denoted by any very marked, so that, when called to the patient with retention of urine, we find the

disease has made considerable but unheeded progress. Sometimes, however, they are markedly severe, but not always easily referrible to their proper cause. Every variety of difficulty of urining may exist, but it is rarely found to be proportionate to the gravity of the case, and indeed frequently surprisingly the reverse—so that we must not attempt to explain either the existence of retention or incontinence by mere post-mortem inspection. The imperfect character of the jet of urine throws no light on the case, for while this may exist in any stricture, it may also be due to a defective expulsive power of an atonic bladder. The urethral discharges do not present any distinctive appearance. The ribbon-like form of the *faeces* can only occur in those rarer cases wherein the tumour takes the direction of the rectum, but when the gland becomes voluminous, and produces irritation of the gut, the patient suffers from pain and tenesmus at stool. As the symptoms afford so little information, *exploration* must be had recourse to. The rectum is to be examined by the finger, by which means we may learn the condition of the lateral lobes, but when the body of the gland is swollen, and carried toward the rectum, we must take care and not mistake it for some disease of the gut. A sound should always be placed in the bladder before examining the rectum, and when the bladder is distended the gland is forced lower down than it would otherwise be. The author gives full directions as to the information to be derived from the manner in which a catheter will pass into the bladder under the various forms of prostatic enlargement. But the difficulty of distinguishing, whether the change in the direction of the instrument arises from diseased prostate, or other causes, is often very great, especially when one sees the case after other practitioners, and false passages may be present and organized.

*Causes.*—The irritation caused by the contact of a calculus, the difficulty of urining produced in stricture, violence done in passing instruments, and the incautious use of injections may be among these. The attributing lesions of the prostate to venereal excesses has been done perhaps too hastily, for there are an immense number of cases to which no such cause can be assigned. Men of letters, who are but little inclined to sexual commerce, are very liable to prostatic affections, while these also occur in the positively inert. In some feeble young men, in whom the venereal functions have never become manifested, the prostate has continued rudimentary, and in some aged but continent persons it has been found atrophied, as if from chronic phlegmasia. The influence of *gonorrhœa* in producing affection of the prostate is very doubtful. The influence of *age*, from whatever cause the disease proceeds, is important; and, thus, the changes occurring in the prostate of children, are very different from those found in old men: in the former we find atrophy, or incomplete development, in the latter, enlargements, excrescences, and other signs of prolonged excessive nutrition. Among *adults* chronic swellings are rare, the maladies then taking on a more special character, usually in combination with affection of the vesiculæ seminales, or other acute malady of the genito-urinary organs, especially retention of urine. The atrophy of the gland in *children* is especially found when the bladder performs its functions badly, and there is much enuresis at night, in which cases the geni-

tal organs are slowly and imperfectly developed. Severe prostatic lesions have however followed cystotomy even in early life.

*Treatment.*—The author enters most fully into this subject, and we had prepared an analysis of his interesting observations upon the mode and difficulties of catheterism in these cases, and the treatment of the disease in its most simple form, and under its various complications; but we find it would occupy too much room, and we will therefore substitute the author's resumé.

"The treatment of the enlarged prostate, then, varies, not only in reference to its own severity, but also in respect to the influence it exerts upon the functions of other organs, and especially upon the expulsion of urine. The re-establishment of the free expulsion of this fluid is of predominant importance. But there are some important distinctions to be made.

1. When the entire or partial swelling of the gland is inconsiderable, and the genito-urinary functions have suffered but slightly from the irritation of the mucous membrane lining the prostatic portion of the urethra, it sometimes suffices to regulate the digestive organs, to relieve the constipation so common in these cases, to prescribe a mild regimen, diluent drinks, hip baths, and emollient glysters, and to remove any obstacle calculated to impede the expulsion of the urine, to obtain a relief of the slight attack to which the patient has been subjected. This is the treatment we can apply at the very commencement of the affection, but it is rare for a patient to have, at this stage of the complaint, good sense enough to apply for assistance.

2. When these means are not entirely successful, and especially if they prove useless, we must forthwith explore the condition of the urethra. Here, as in the case of simple neuralgia of the neck of the bladder, the passage of the instrument along the mucous membrane of the urethra, informs us of the degree of irritation present. If the sensibility of the canal be not excessive, and connected with but a trifling lesion, the instrument may perhaps cause a salutary counter-irritation, the symptoms may diminish, and shortly cease altogether. All that remains then is to consolidate the relief by adopting the means already recommended.

3. But if the irritation produced be considerable, and connected with some important lesion, the patient may suffer more than heretofore for some days after the exploration. Having alleviated this temporary aggravation of suffering, the morbid sensibility of the urethra, whence it arose, must be diminished. Soft bougies, introduced with great care, and retained *in situ* from two to five minutes, form our most certain means of treatment. From eight to twelve applications, and sometimes less, suffice to allay the irritability of the canal, and to dispose it for the reception of the instruments which may be necessary for the entire cure. From the mere fact of the diminution of the sensibility of the urethra, the patient perceives a notable improvement to have resulted, which, commencing after the third or fourth introduction of the instrument, continues permanent. Frequently it has proved sufficient to continue these means for some time, and to combine with them attention to the general treatment, to procure the re-establishment of health, in a manner that could never have been anticipated. Even if this result does not follow, we have only lost a little time, and at least have exposed the patient to no hazardous treatment.

4. There are cases, however, wherein these means do not succeed, or the benefit derived is only temporary. The position of the practitioner now often becomes one of difficulty, as the symptoms take on a more active form. Moreover, his difficulties imprison him as it were in a circle, for, the patient cannot urinate without a catheter, and the passage of this over the neck of the bladder reproduces all the painful symptoms. We may say now that all our

efforts become limited to the surgical treatment of the symptoms as they arise, varying our means according to the urgency of the case, for we know of no mode of obtaining the resolution of an enlarged prostate, especially if it have passed into a state of induration. Our office is confined to preventing it as far as possible from abridging the life of the sufferer, or rendering the remainder of his days a continued course of suffering."

*Errors in treating enlarged prostate* have arisen from want of experience, whence this affection has been supposed to exist where mere neuralgia or atony of the bladder were actually present, and the means used for the relief of these, have been afterwards applied to real cases of the disease, thus increasing the number of inoperative remedies. So, too, attention has frequently been turned rather to the attendant disury or strangury than to the diseased state originating them. Owing to the supposed mere mechanical operation of instruments, in relieving retention of urine, these have been frequently used too large, and left in too long, exerting by far too much pressure on the parts with which they were in contact, and producing inflammation, ulceration, or perforation, with fatal re-action. The removal of an instrument as soon as any serious symptom occurs, and its cautious re-introduction only when this subsides, is often attended with the happiest effect. The use of *caustic* requires great caution. It may be sometimes slightly applied, when the prostatic affection is accompanied by chronic phlegmasia, or obstinate neuralgia, or when slight excrescences exist at the commencement of the affection. The influence of this substance has been much exaggerated, as it can only act by changing the condition of the vitality of the parts, which may often be effected by other means. Its application is usually too forcible. It always succeeds best after the use of the soft bougie, and the author limits himself to two or three applications.

#### CHAP. 2.—*Suppuration of the Prostate.*

This may occur with or without preliminary engorgement, its usual source being a phlegmasia of the mucous membrane, brought on by retention of urine, or other irritating cause. Abscess is recognized by no peculiar symptoms, and is often only discovered after death. Sometimes, collections of pus, formed in the substance of the gland, may be felt from the rectum, and these sometimes burst into the urethra or the rectum, and, as soon as the collection can be discovered to exist, an incision should be made into it. The violent use of instruments may prove a cause.

#### CHAP. 3.—*Ulceration.*

The greater portion of wounds and injuries of the prostate heal with facility, but in some cases these degenerate into destructive ulcers, which should be rather referred to a peculiar diathesis, than to the irritating qualities of the urine. The diagnosis is uncertain, and we have no means of arresting the progress of these fortunately rare cases.

#### CHAP. 4.—*Atrophy.*

Suppuration will sometimes reduce the gland to a mere hard kernel. The author, in his work upon calculous affections, has given several examples of the presence of a calculus in the bladder having prevented the

development of the prostate, so that, it seems, sometimes, to have almost disappeared, while, at other times, even when stone did not exist, the gland has been perceived with difficulty from the rectum. The exact condition of the part is sometimes of difficult recognition, as there are no special symptoms, and local examination gives mere negative signs. Considered by itself, atrophy is not an alarming affection, but the functions of the bladder become more or less disordered, and there is usually defect or loss of genital power.

#### CHAP. 5.—*Cancer.*

The affection usually termed cancer may be merely an inordinate degree of induration, which may exist to such an extent as to grate against the scalpel when divided. Cancer, properly so called, is so rare that Cruveilhier says he has never seen a case. It does however occur, though rarely.

#### CHAP. 6.—*Prostatic Calculi.*

Calculi may be found in the substance of the prostate, in its ducts, or their orifices, and in the portion of the urethra traversing the gland, varying in colour, form, and consistence. Although occasionally vast numbers have been found, they are usually few in quantity and small in size. They may often be detected by passing a sound into the bladder, and a finger into the rectum simultaneously, or, when they project into the urethra, by taking an impression by means of the wax bougie. In many cases the only sign during life has been a tumefaction of the gland, and the diagnosis when complications exist is often difficult.

### IV. DISEASES OF THE BODY OF THE BLADDER.

#### CHAP. 1.—*Fungus and Polypus of the Bladder.*

Though not exclusively, these tumours are usually situated in the vicinity of the neck, and are often confounded with the enlarged state of the middle portion of the prostate. Their form and surface and mode of attachment are very various, their volume being usually inverse to their numbers. They are seldom found in women or children, but are common in adults suffering from stone. Though usually accompanied with a state of phlegmasia of the mucous membrane of the bladder, there may be a preternatural paleness, and very obstinate cases of neuralgia have seemed sometimes to be owing to their presence. Their symptoms are vague and unspecial even when the case is simple, and, of course, far more so when it is complicated, as it so often is, with stone or diseased prostate. Valuable information may be obtained by exploring with lithotritry instruments, but, as the author observes, these require experience and dexterity, and may give rise to much suffering. These however form the only means we can safely employ for their removal when detected.

#### CHAP. 2.—*Cancer of the Bladder.*

The author does not consider that the bladder is specially attacked by cancer, but that some of its affections, as tumours, &c. may degenerate into cancerous ulceration, of which he has seen several examples.

### CHAP. 3.—*Tumours formed within the Walls of the Bladder.*

These are easily confounded with hypertrophy. These tumours may exist as *partial thickenings of the walls of the bladder*, which project on the external surface only, and usually occupy but a very circumscribed space, though this is not always the case. Although generally only recognized after death, in some cases the tumour may be felt through the abdominal parietes, or by the rectum. In other cases, which are not rare, they may be *abscess within the walls of the bladder*, when the pus may become infiltrated into the tissues, or collected into circumscribed depots. Sometimes these project internally, at other times externally. They may be produced by external violence, retention of urine, &c. The abscess may find vent into the abdominal cavity, the rectum, at the surface of the abdomen, and other situations. The most favourable termination is when the pus escapes by the urinary passages. The diagnosis is very difficult, but, when a collection of matter can be discovered within reach, we should open it at once.

### CHAP. 4.—*Tumours developed on the External Surface of the Bladder.*

These may occur in various modes, as

A. *Irregular Distention of the Bladder.*—The bladder in becoming distended often expands unequally, especially if hypertrophied, or possessing some original malformation. The tumour it forms is elongated or flattened, and is often directed towards one of the iliac fossæ. In diagnosis we must always bear in mind the shape the bladder should assume on distention in its normal condition. In youth, it forms an oval, terminating in a point towards its summit. Later, the fundus becomes more rounded, and the organ takes a more pyriform shape. In the adult, the bas-fond becomes much enlarged, and occupies afterwards a large portion of the pelvic cavity, raised up as it were by the rectum, which, when distended, forms a notable projection upon its inner surface. In woman, the organ spreads out rather laterally, than from before backwards, in which latter direction it becomes flattened, by the womb and appendages—so that in her there may be said to be two bas-fonds, distinguishable by the catheter.

B. *Secculi (Cellules Vesicales)* are formed by the protrusion of the mucous membrane between the muscular fibres, which occurs especially when these are in a state of hypertrophy. These pouches are sometimes numerous and small, but, at others, of greater capacity, than the bladder itself. When they contain only urine, their consistence is soft, but it is firmer when they contain pus, scrofulous matter, calculi, or have contracted adhesions to the surrounding tissues. They are chiefly situated towards the bas-fond and posterior wall of the bladder. Although of common occurrence, these sacculi have frequently been passed unnoticed by reason of the small apertures existing when the hypertrophy is slight. As these cavities, when large, possess little or no expulsive power, the urine remains within them, often causing the production of phlegmasia, the deposition of calculi, &c. It is often impossible to do more than suspect the existence of this affection, identical symptoms being produced by an atonic condition of the bladder.

c. *Hernia of the Bladder*.—In *man* this occurs usually at the inguinal canal, and may exist on one side only or on both, and be formed of the bladder alone, or of it and the intestine. It may be mistaken for a common hernia, hydrocele, or inguinal abscess. The absence of the ordinary tumour caused by the distended bladder, and the co-existence of a free flow of urine and the disappearance of the swelling upon pressure, form the best diagnostic marks. Catheterism is another means of preventing error; but still, when called to a patient for the first time, suffering from retention of urine together with a large hernia, great errors may be committed in deciding as to whether the tumour comprises the urinary bladder or not. Among *women*, in pregnancy, the bladder may be forced towards the perineum; and, indeed, independently of pregnancy, this is by no means rare in them, for distention of their bladder forces downwards its neck and the urethra, thrusting the vagina before it even to beyond the vulva, and rendering the passage of a catheter difficult or impossible to the most skilful practitioner. If he succeeds he is astonished at the shortening of the canal which the displacement has caused, the external and internal orifices being almost in contact.

#### CHAP. 5.—On the Forced Sojourn of Urine in the Bladder.

This may occur from two causes, viz. from the loss of expulsive power by the bladder, the passages for the urine remaining free, which the author calls *stagnation*; and from the obstruction of the urinary passages, the powers of the bladder remaining normal, increased, or diminished as the case may be, which is termed *retention*. This distinction will be found to be practically useful.

A. *Stagnation of Urine*.—In its most *simple* condition this affection exists very commonly, but, owing to the slight and vague symptoms attending its early progress, it may long escape notice. Upon questioning the patient, we shall find that for some time past he has not been able to evacuate the bladder completely, and that the urine has not flown in a full jet. It is common in neuralgia of the neck of the bladder, in diseases of prostate, and commencing stricture, &c. When the bladder becomes much distended it does not present a hard tumour as in the normal condition, but gives the sensation of a collection of fluid yielding towards the iliac fossæ. The diffused and soft nature of this tumour renders its distinction from the intestines often difficult, especially if the patient is stout, or if his tissues, as often happens, be flabby and infiltrated; while, as the bladder sometimes becomes distended to an enormous size, it has been mistaken for a dropsical effusion. Dr. Civiale has met with cases in which no kind of examination was assuring as to the condition of the bladder. In spite of great distention many patients pass small quantities of water daily, thus taking off attention from the seat of mischief. Sometimes the pain is severe, at others vague, and referred to some distant part of the body. The best means of ascertaining the condition of the bladder in such cases, is to pass a catheter as soon as the patient has ceased to urinate, and employing pressure on the hypogastrium, remove that portion of urine which the natural powers were unable to evacuate, and the quantity of which will furnish some index of the extent of their feebleness. The



same will be learned by injecting the bladder several times with cold water, and observing the time and mode of its rejection.

In the slightest degree of this affection it is usually discovered by mere chance, and may be *treated* with great facility. Wet compresses applied to the penis, perineum, or thighs, or the shock of cold water to some part of the surface, together with avoiding the habits which had led to its production (as *e. g.* passing urine without getting out of bed, and the not taking sufficient time to empty the bladder,) will usually suffice. But when the early symptoms, as often happens, have been neglected, the patient going on for days, months, or even years, only partially emptying his bladder at each contraction, a state of semi-paralysis and semi-distention of the organ results, and upon the occurrence of any excess such a patient is always liable to complete retention—long prior to which, however, change in the composition of the urine, and an increased frequency of desire and difficulty to void it, will have advertized him of the increasing gravity of the complaint. Retention arising from this cause is sometimes most improperly treated by depletory measures. The first indication is the prompt employment of the catheter, and this may be required to be repeated several times daily until a more vigorous condition of the organ prevails. This is better practice usually than leaving a catheter in the bladder, producing a more rapid cure, causing less local irritability, and not destroying the urethral elasticity. For some time after apparent cure the state of the bladder must be examined from time to time, and the patient must avoid long journeys and other causes likely to provoke retention. Bed should be little indulged in, as distention is more likely to occur while in the recumbent posture, and the catheter should be used during several evenings after its discontinuance in the day. The patient is often tormented with false desires of urining, which may be distinguished from the real by the absence of the hypogastric tumour, and by the introduction of an instrument. They should be resisted as far as possible. *Injection of the bladder*, repeated three or four times a day, and with cold or tepid water, according to the degree of atony present, are excellent means of restoration of power. In more obstinate cases the irrigation of the bladder and rectum by a continued stream of fluid, or the douche, will be found useful. The author does not approve of *counter-irritation*, except when the retention is caused by an affection of the spinal marrow, nor of stimulating remedies, such as cantharides, diuretics, balsams, &c. save at least as mere accessories.

*Complicated Cases.*—The means already mentioned do not always accomplish a cure, even in the simplest cases, and for those of a more complex character various modifications may be required. Every obstacle to the free expulsion of urine must add to the existing atony of the bladder, while the diagnosis often becomes much obscured. Strictures, and other lesions of the urethra, even when very slight, neuralgia of the neck of the bladder, lesions of the prostate, lesions of the walls of the bladder, especially their sacculated condition, atony or morbid sensibility of the rectum, may each become causes of the production of atony of the bladder, or aggravate it when existing. In all diseases of the urinary organs there is often a severe influence produced upon the general health quite out of all proportion to the extent of the local lesion, occurring especially in

patients of a nervous temperament, or in persons exhausted by excess of labour, &c. In such cases there is great irritability of the urethra, and excitement of the general system, and if instruments be roughly employed, great mischief must result. Atony of the bladder is a very common occurrence in *women* under these circumstances, although it may in other cases exist obstinately even in strong constitutions. Lesions of the nervous system form a very grave complication or cause of atony of the bladder; and in all injuries of the brain and spinal marrow the condition of the bladder should be carefully investigated, even though the patient may continue to pass some urine. In affections of the spine, the bladder becomes so gradually affected sometimes, that the symptoms may quite escape the patient's notice. The partial paralysis remaining after apoplexy also produces an atonic condition of the bladder and rectum, yet evidenced by very slight symptoms until sought for, and indeed liable to be quite overlooked, as some degree of expulsive power still remains.

It must always be recollected, that frequently with atony of the bladder co-exists a state of spasm of its neck, requiring great care in the employment of instruments. Although in most cases of atony of the bladder a state of atrophy of the walls exist, yet in some cases hypertrophy is co-existent with great enlargement of the cavity of the organ. A chronic inflammatory condition of the mucous membrane of the bladder often exists, and as it may easily become aggravated into fatal cystitis, we must introduce the instruments necessary for the removal of the urine with the utmost care.

**B. Retention of Urine.**—This is a symptom producible by many different morbid conditions, and it is wrong to look upon it as an essentially distinct malady. By reason of its frequency, retention, arising from narrowing or occlusion of the urethra, is the most interesting form of the complaint. The bladder may be influenced in two different manners in these cases. It may yield to the distending power of the fluid, and a certain portion of the urine may eventually escape by regorgement when the stricture is not too close: or it may vigorously re-act against the obstacle, its power and consequent muscular development increasing as this is great, so that a small portion of urine is usually forced through the obstacle, sufficient to afford temporary relief, and to deceive the patient. But, upon the least excess, complete retention may occur, and, although perhaps relieved by depletion, baths, &c. will return again under similar circumstances, the accompanying symptoms and constitutional irritation placing the patient in a most perilous condition. The diagnosis, however, easy in ordinary cases, is very difficult in that of a contracted bladder, for in this no tumour can be felt externally and the presence of a few spoonfuls of fluid suffice to produce the symptoms. In *treating* retention precious time is often wasted by having recourse to bleeding, baths, purgatives, &c. When it comes on after excess of table, prolonged resistance to the desire to urinate, &c. the catheter must be at once, but most slowly and carefully introduced, and it will be found that the irritability of the urethra and neck of the bladder, existing in these cases, is relieved by the very same means which tends to re-establish the equilibrium between the resistance of these parts, and the expulsive forces of the bladder. The contusion of the urethra by

the pressure of the child's head in labour, or the passage of an instrument, may cause such a change in the vital energy of the parts as to lead to retention, and yet no means is so effectual in restoring the equilibrium as an instrument, passed, however, on account of the great irritability present, with the greatest caution. Inflammation of the bladder may arise from retention, and forms a very grave case, but with due care a catheter may be introduced, and the irritating urine abstracted. When retention is caused by very narrow stricture, great difficulty often arises in passing an instrument, and none but the experienced must attempt it. Aid may be derived here from leeches, prolonged baths, narcotics, &c. but the author especially praises the use of very small bougies, not with the view of procuring dilatation, but of causing the cessation of the spasmodic condition of the part which is the immediate cause of the retention.

*c. Indirect Consequences of Stagnation and Retention of Urine.—(a.) Effects on the Kidneys and Ureters.*—The mutual sympathy between the kidneys and the bladder is well known. A slight irritation of the neck of the bladder will produce a great change in the renal secretions, while the changed composition of these latter exert much effect upon the condition of the bladder. For the urine to be secreted normally by the kidney its free expulsion must be secured, and when distention of the bladder occurs the cavities of the kidneys and ureters become similarly affected, and they also employ active and injurious efforts to obtain the propulsion. The author considers that diseases of the kidney are at present too abstractedly considered, without due reference to the condition of the rest of the urinary apparatus. He has met with cases of albuminuria and diabetes insipidus dependent upon neuralgia of the neck, and consequent atony of the body of the bladder, and which have been at once cured by relieving that condition. Much of the lumbar suffering, also, said to indicate disease of the kidney, arises from functional disorder of the bladder; and the best means of preventing organic disease of the kidney will be to treat it by establishing and maintaining the normal condition of the bladder and urethra.

*(b.) Effects upon the integuments*—As in the case of stone, obstinate cutaneous eruptions may result from atony of the bladder, to be relieved only as the functions of this organ are re-established. In these cases the original affection has usually made serious progress.

*(c.) Effects upon the Lower Extremities.*—Many patients suffer from pains at the inner sides of the legs, or sole of the foot, as they do indeed in irritation of the neck of the bladder and calculus; but these are not to be confounded with the abscesses which may be produced in various parts of the body, as a consequence of diseases of the urinary apparatus. They are usually temporary, accompanying a desire to urinate, and are unattended by fever or re-action.

*(d.) Effects upon the Brain, and Pulmonary Organs.*—Persons affected with retention are very liable to congestions of these organs; and the

numbers who perish from apoplexy, brought on by unavailing efforts to urinate are considerable.

(e.) *Effects upon the Bladder.*—The colour of the mucous membrane is sometimes found preternaturally pale, especially when atrophy exists: at other times, it is injected to the extent of becoming brownish or violaceous. The texture may be so softened as to tear upon the slightest pressure. But this is a rare condition to be found compared with that of hypertrophy and a diminution of the cavity.

#### CHAP. 6.—*Incontinence of Urine.*

As in the case of retention, most authors have considered this as a special malady, while, in the majority of cases, it arises from a forced sojourn of the urine in the bladder, which is itself dependent upon some anomalous condition of the urinary passages:—so that the incontinence is here literally *a consequence of a consequence*.

*Diagnosis.*—This though easy enough as to proving the mere affection to be present, becomes more difficult when we wish to decide whether it be a true and essential incontinence, or a false and sympathetic one. When the bladder possesses slight capacity a very little urine will distend it, and then a flow from regorgement or over-distention occurs, which is liable to be mistaken for paralysis of the neck of the organ. This is also the case when we can feel the distended bladder at the hypogastrium, as we may be assured by the introduction of a catheter, after which the incontinence will cease for a few hours, until the state of over-distention is re-produced. The use of the catheter, to ascertain the quantity of urine retained, and of injections to ascertain the capacity of the bladder, and its power of expulsion, can alone throw light upon the case.

*Varieties.*—(1.) *Incontinence from Paralysis of the Bladder.*—Paralysis is usually not complete until the disorders arising from atony of the bladder have long endured and become very serious. Many circumstances exert a secondary effect upon the production of the attack of incontinence as excess at table, neglect of the calls to urinate, and various causes irritating the neck of the bladder. But riding, whether on horseback, or carriage, seems to exert an especial influence in causing it in those whose bladder by neglect has become atonic, exhibiting itself at first by a few drops, and afterwards in larger quantities. In other cases the affection appears without immediate exciting cause; but the patient is not aware often, until we question him, that his present inability to retain his urine is a mere consequence of long-standing imperfection of power of voiding it. The treatment is that adapted to atony of the bladder, and is usually very tedious; while, if the incontinence have long existed, it is often incurable, depending in this case, however, frequently, upon some cerebral or spinal lesion. If caution be not adopted in treating these cases, cystitis, hæmaturia, and other alarming consequences may result, and this has often been the case when injections of irritating substances have been employed. (2.) *Incontinence consequent upon Retention.*—Some patients after suffering all the agonies of retention, fall into a species of collapse,

during which the urine escapes drop by drop, involuntarily however, the bladder having ceased to contract. This case is, however, not quite identical with the last. When atony has preceded the incontinence it is a more serious affair, for the paralysis has been long coming on, and has at last become complete: while, in most retentions, the exhausted bladder usually undergoes a mere suspension of its contractility. In the one case, too, the urine flows continuously, unurged by any propelling force, in the other it is interrupted, occurring only drop by drop, of which the patient is aware, and often endeavours to aid the flow by voluntary exertions. In fact, here incontinence, literally speaking, does not exist, for the functions of the bladder are yet capable of propelling the urine, could the passage be freed from obstacle. If the case be not relieved, however, true paralysis succeeds, and the urine flows away unknown to the patient. The case is serious in proportion to the difficulty of removing the obstruction to the flow of urine. Sometimes the affection comes on insidiously, as, since some urine is expelled, and the patient ceases to suffer the urgent symptoms of retention, he delays obtaining the only means of relief—instrumental intervention. (3.) *Incontinence after confusion, or forcible dilatation of the Urethra.*—This is not rare after accidents, operations conducted through the urethra, and accouchement. The urethra may be greatly dilated by the efforts of nature, without the production of incontinence, as is seen in the expulsion of large calculi in women; but a dilatation produced suddenly and artificially, though of much less extent, causes it. Dilatation of the male urethra, for the removal of calculi, or the cure of stricture, may also cause incontinence; but the author denies that this occurs, as has been said, after lithotrity, since no distension is therein employed. The case must be treated by the means adapted to retention. If the urethra have lost much of its elasticity, the prolonged use of the douche, and friction of the surrounding parts, and, if the neck of the bladder have suffered, and resists other means, a few light applications of caustic, will be useful. (4.) *Incontinence after prostatic lesion, Neuralgia of the Neck, and serious affections of the Body of the Bladder.*—These affections must have proceeded to an advanced stage to produce this effect: but mere excitement of the lining mucous membrane will suffice to paralyse, to a certain extent, the contractility of the neck of the bladder. In these cases, depletory and anodyne means may require to be combined with the local procedures. (5.) *In Calculous Affections* it is not unfrequent, but certainly does not depend, as has been stated, upon a stone becoming in part engaged within the neck of the bladder. Sometimes it results from the exhaustion of the bladder after prolonged efforts, but usually from the continued irritation of the neck of the bladder, kept up by the foreign body. (6.) *Incontinence without distension of the Bladder.*—In this case, sometimes the neck of the bladder is relaxed and paralysed, or the body of the viscus may continue in a condition of permanent contraction strong enough to overcome the resistance of the neck. In cystitis, and sometimes in neuralgia, the patient may find even the contact of a few drops of urine so insupportable as to endeavour to expel it every few minutes, without which it would escape of its own accord. Analogous to the action of the sphincter ani in diarrhœa, the orifice of the urethra opens to permit the urine to pass, rather than closes upon it, the bladder

still performing its functions but too actively. Our treatment must be directed to the relief of the condition of the phlegmasia, and these cases often assume a very grave aspect. In a small proportion of cases the neck of the bladder, and muscles of the perineum are attacked with paralysis, and the body of the organ possesses but a feeble degree of energy. No contractions follow repeated injection. Such cases are very serious, and often depend upon a cerebro-spinal lesion, or general failure of the constitution. Occasionally, cases are met with, in which, from organic disease, the neck of the bladder is kept in a rigid, scirrhus, and a constantly patent condition. More rarely we find the hypertrophied bladder, associated with a want of contractility of the neck, so that the organ unable to contain more than a table-spoonful or two, the surplus is continually escaping. We cannot here distend the cavity by forced injections, but temporary relief has followed the use of warm mucilaginous injections, and the employment of opium by the rectum. (8.) *Incontinence from a Dilatation of the deep portion of the Urethra.*—There are persons, who, after having expelled a jet of urine, find the remainder come away drop by drop for a long while after, so as to render precautions of dress necessary. This may depend upon prostatic lesion, stricture, and also upon a dilated condition of the deep-seated portion of the urethra; forming a kind of pouch in which urine, and sometimes gravel, becomes accumulated. Cold applications and douches to the perineum, &c. glysters, and the injection of small quantities of water into the membranous part of the urethra are required, but it is long before the urethral walls re-acquire their lost tone. These pouches, depending usually upon the presence of organic stricture, or obstinate spasm of the urethra, our attention must be directed to the relief in the first instances of such conditions.

*Incontinence of Urine in Women.*—Incontinence arising from a paralytic condition of the neck of the bladder, is common in women, but, owing to their modesty preventing early application for relief, the affection is usually well established before the practitioner sees the case, and thus, although the application of instruments is easier in them than in men, the disease often assumes a graver aspect. It is an error to suppose that the bladder of women retains injections less easily than that of men, and caustic, when required in obstinate cases, is more easily applied in women, and succeeds better with them than with men.

*Incontinence in Children.*—In childhood, the functions of the bladder are performed very irregularly. Children urinate abundantly, but it seems frequently to flow without producing any sensation. In general, debility of constitution, or irregular development have much to do with prolonging the affection, which, from being neglected at first, often acquires great obstinacy. The author is convinced that, in most cases, it depends originally upon an atony of the bladder, allowing large accumulations of urine, and accompanied with irritability of the neck of the bladder. By relieving these morbid conditions, the disease has often been cured. In fact, it results from a state of regorgement or reflux from over-distention, and it is rare indeed to find incontinence proceeding in children solely from a relaxed condition of the neck of the bladder. Although a

disposition to this affection seems more common in some families than in others, it cannot be considered as hereditary. In many cases the malady terminates spontaneously between the years of one and five. In others we must be guided by the principles of treatment already alluded to. It is, however, at this age to the general treatment we must chiefly look, local measures being quite secondary at the commencement. Yet, when the disease has become obstinate, the catheter, injections, or even caustic may be required. There is a case which is mistaken for incontinence, viz. where, in fact, the *bladder performs its functions with vigour*, the child propelling the urine in a good stream during sleep. The child should be awake two or three times in the night to urinate, and it is to this case moral correctives are to be applied.

*Incontinence in Adults and the Aged.*—So rare is essential incontinence from a paralysis of the neck of the bladder in the *adult*, that Civiale has only seen two cases. At this period of life, too, even secondary incontinence is a less frequent and less serious affection, as the maladies with which it is connected are usually curable. *Old men* are very liable to incontinence, but it is usually the effect of regorgement, and not as supposed from a diminished extensibility of the bladder. It is towards the close of life, indeed, we find those lesions of the urinary apparatus especially to prevail, which provoke a stagnation of urine, leading to incontinence. Primary incontinence only occurs in a few cases, in which an indurated condition of the neck of the bladder seems to have destroyed all its contractility, allowing the urine to escape as it arrives in the bladder; or in some others in which a very hypertrophied state of the walls is joined to a very diminished capacity of the cavity.

*Treatment.*—The author has already considered this as applied to the chief varieties, and now adds a few general observations. *Injection and irrigation* of the bladder are most important remedies, and water, gradually reduced to as cold a temperature as can be borne, seems to be the best fluid. The quantity thrown in must be moderately large, but in all our proceedings we must be careful not to excite inflammatory re-action. When injections are inadmissible, as they often are, (*e. g.* in advanced prostatic disease) or to aid them when they are not so, a catheter may be often left in the bladder with advantage. Cold local or general baths and douches are often useful, especially at the sea-side. In other cases warm or medicated baths may be required. Revulsives must not be neglected, especially when the incontinence is connected with lesion of the spinal marrow, thus, a succession of blisters may be applied to the sacrum, hypogastrium, and thighs, and tartar emetic ointment is often useful; but the former must not be employed when a very contracted state of the bladder, or irritability of its neck exists. No reliance should be placed upon the various empirical remedies. When all means of cure fail, we must have recourse to mere palliation, by the employment of mechanical inventions for collecting the urine as it flows, or preventing its egress externally.

#### CHAP. 8.—*Hæmaturia.*

This is merely a consecutive effect of various maladies.

**Diagnosis.**—The determination of the existence of blood in the urine is usually not difficult, although some articles of diet, especially beet-root, produce a very similar colour. When in any quantity the blood forms into coagula, which however have a very different appearance to those formed by blood out of the bladder. The source of the blood may be the urethra, bladder or kidney. Bleeding from the *urethra* may occur in gonorrhœa or chordee, or follow excess of coition, introduction of instruments, use of caustic, extraction of calculi, &c. It may occur in quantities sufficient to excite inquietude, but flows independently of the urine, and is not accompanied by a sense of fulness and irritability of the bladder. When the deep-seated portion of the urethra is the part affected, the source of the blood often becomes a matter of obscurity. When the hæmorrhage proceeds from the *bladder*, it combines with the urine, when it exists in large quantities, but otherwise forms into black clots. The blood may proceed from tumours or other anormal growths, or from a phlegmasia, arising from excessive distention of the bladder, when it would not seem to exhale from any one part in particular, but from the whole surface. When the bladder contracts upon a large calculus it may bleed at any part, but when the stone is small the hæmorrhage usually proceeds from the neck. The bleeding is judged to proceed from the *kidneys* and *ureters* when no cause for its existence can be discovered in the other portions of the apparatus, or when some injury has been inflicted upon the lumbar region: but the case is frequently purely conjectural, and hæmorrhage arising in consequence of over-distention of the bladder is frequently attributed to the kidney, and as our means of exploration have become more accurate, the number of renal hæmorrhages have decreased.

**Varieties.**—(1.) *Hæmaturia in connection with Stricture, Neuralgia, and Atony of the Bladder.*—A neuralgia of the neck of the bladder, accompanied by little or no stricture, but by a mere rigidity of the urethra, may give rise to an exhalation of blood. Indeed, when the urine is retained in the bladder from any cause, it may become sanguinolent, and many patients fall victims to the affection whom a prompt use of the catheter would have saved. Distention of the bladder, especially in the aged, is the commonest of all causes of hæmaturia. (2.) *Hæmaturia in calculous Affections.* Contrary to what most authors state, stones of an irregular exterior do not give rise to hæmorrhage oftener than those whose surface is smooth and polished. Hæmaturia in these cases is usually not very abundant, unless some organic lesion of the bladder be present. (3.) *Hæmaturia from Organic Lesion.* The appearance of hæmorrhage in fungus, ulceration, tumours, &c., of the bladder has frequently been the cause of the patient's first applying for medical aid for an affection hopelessly advanced. The symptoms accompanying it sometimes resemble those of stone. Many persons having various affections of the urinary passages, are very liable to hæmorrhage after journeys. (4.) *Hæmaturia in Cystitis.* This proves the inflammatory action has reached a great height. To this cause, and inflammation excited in the kidneys, various anomalous forms of hæmorrhage are to be referred. Articles of diet, as truffles, according to the author, produce it. Stimulating injections for incontinence of urine, and both the external and internal use of cantharides, have produced the



same effect. (5.) *Hæmaturia from Violence*. When injuries to the perineum, riding on horseback, &c. produce this affection, some lesion of the urinary apparatus has usually predisposed to it. (6.) *Hæmaturia from Atmospheric Causes*. The army surgeons attributed the frequent occurrence of this affection in Egypt to the high temperature. Dubois, the celebrated surgeon was obliged to return to France on account of Hæmaturia. In many tropical regions the affection is endemic, and is frequently accompanied by gravel. Feeble persons sometimes lose an ounce or two of blood daily for several years without apparent effect upon the health. When the affection has become obstinate, mere change of climate will not relieve it. (7.) *Periodical Hæmaturia*. In some rare cases, a congested state of the urinary passages gives rise to a periodical flow of blood, especially in women, after the critical age, and in men who are liable to hæmorrhoids. Without denying that these bleedings may be sometimes metastatic and succedaneous, the author blames the generalizing into a law a few exceptions, and thus neglecting an exact exploration of the state of the urinary organs prior and subsequent to the flow of blood. These hæmaturia are usually obstinate, but produce remarkably few ill effects. Every variety as to the appearance, quantity, and progress of the hæmorrhage may occur. (9.) *Critical Hæmaturia*. The author expresses his doubts as to the existence of these, and many of the affections, as atony of the bladder, lesions of the walls and neck, whose resolution the hæmaturia is said to have procured, are the very conditions which have led to its production.

*Frequency as to Age*.—The voiding of blood is very seldom found in children, even when calculi are present, and in them explorations of the urethra and bladder are seldom followed by bleeding. It is in *old age*, when the bladder so frequently becomes over-distended, that the affection especially prevails, a condition of the bladder very favourable to it, conjoined with the determination of blood towards the pelvis, which occurs in advanced life.

*Prognosis*.—This depends chiefly upon the gravity of the cause producing the malady. Hæmaturia, dependent upon a mere passing distention of the bladder, is soon capable of relief; But Dr. C. considers the opinion that the voiding of blood after suppressed discharges is beneficial rests upon slight foundation. In some cases the mere abundance of blood has proved fatal, but, generally speaking, danger is by no means proportionate to the quantity lost: for, some patients, of apparently no great resources, lose large quantities with little enfeebling effect, while others have become entirely cast down by very slight discharges.

*Treatment*.—After reviewing the various means employed by authors for the treatment of this affection, as bleeding, astringents, injections, &c. the author observes these may become in different cases useful auxiliaries; but, employed exclusively, without attacking the evil at its root, they can seldom succeed, and may prove hurtful by entailing the loss of precious time. The extraordinary farrago of medicines which have been proposed for the relief of the disease, proves the ignorance which has prevailed respecting its nature.

The proper treatment is simple, for as the affection almost always arises from an over-distended bladder, our object should be to relieve and prevent the recurrence of such distention, and when applied to before the general system has suffered from the disease, our means of effecting this do not often fail us. The treatment in fact appropriate for atony of the bladder is here indicated. The urine is to be carefully, slowly, and with pauses removed. The manner of its flowing will indicate the degree of contractile power remaining, and the necessity of injection. The source of the hæmorrhage, however, is sometimes not discoverable, and the treatment unsuccessful or at all events very tedious, during which the general health may give way. Periodic flows of blood must be merely watched and met with hygienic precautions, and no active efforts at their suppression, especially in the aged must be made unless the hæmorrhage reach a dangerous extent. These cases, said to be so common, are in fact rare, and the examples the author has met with have not occurred in the feeble, but in the robust and well-nourished. There are some good directions for the management of catheterism when the bladder contains coagula.

#### CHAP. 9.—*Catarrh of the Bladder.*

There is no affection of the bladder more frequently met with, and none upon which definite ideas of treatment are less entertained. It is a phlegmasia (usually chronic) of the internal surface of the bladder, producing a special character of the urine, arising from the presence of the abnormal secretion of the mucous membrane. The secretions may be *mucous*, presenting every variety in consistency, quantity, and colour; sometimes accompanied by peculiar sensations during their expulsion, sometimes not: generally inodorous, but occasionally far more fetid than even ammoniacal urine. Again, the products of the mucous follicles may be *puriform*, or nearly resembling pus, and usually mixed with mucous. They may be distinguished from true pus by the urine which contains them reddening turnsole, while urine containing pus possesses alkaline properties: pus, too, exposed to the flame of a candle will inflame, while mucous only chars. If, also, the urine be decanted, and cold water poured upon the deposits,—these, when mucous, will be raised in little masses or filaments, swimming on the surface of the fluid without mingling with, and scarcely colouring it: while, pus commingles with the water, colours it of a yellowish-white, much resembling the turbid urine when first voided, or when stirred prior to decanting it. Lastly, the discharges may be truly *purulent*, the urine becoming alkaline, or at least neutral. Alkalinescence of the urine, however, may occur in a healthy state of the bladder, or under the influence of several diseases. When the deposits are truly purulent, the general health is usually much disordered, and the presence of some serious organic lesion is to be feared. The symptoms of catarrh which the author cites have nothing diagnostic, being similar to those arising from many other of the affections of the urinary apparatus. If left to itself the disease usually proves eventually fatal; but it is often successfully treated when commenced with early, and due attention paid to the nature of its cause. When death does occur, it is less due to the phlegmasia itself than to secondary lesions.

Instead of a chronic phlegmasia, acute *cystitis* may exist, and which

affection. In these cases, it is usually very thick, containing portions of the diseased structure, and attended with horrid fætor and frequent hæmaturia. Sacci of the bladder may also be affected with violent phlegmasia, and giving rise to abundant catarrh.

(5.) *From Urinary Calculi.*—Under the influence of the catarrh, calculi may be formed, while, when they exist, they serve to aggravate the catarrh. Renal calculi rarely produce it, or only after they have long existed. The physical characters of the stone in the bladder, and constitutional peculiarities of the patient give rise to great varieties: for while in the last stages of calculous disease no catarrh may exist, in others, it is found with the earliest appearance of the stone. It may occasionally persist after the removal of the stone, and aid in its reproduction. It usually depends upon the atonic condition of the bladder, but at other times upon local injuries inflicted by the stone or instruments.

(6.) *Catarrh from Hypertrophy.*—Hypertrophy may be either a cause or consequence of the catarrh, of which we judge by the manner in which the patient urined prior to the appearance of the discharge. The suffering is great and the case may easily pass into one of cytitis, accompanied with dreadful anguish.

(7.) *Catarrh from Atony and Incomplete Paralysis.*—More than one-half the catarrhs are the direct consequence of this condition. It is here occasioned by the unavailing efforts of the bladder at complete evacuation, or by the irritating effects of the stagnated urine. The affection comes on so insidiously, that it may have far advanced, and the constitution received a severe shock before the patient applies for aid. Although an examination by the catheter can alone reveal to us the nature and extent of the disease, its employment is not inculcated in books. The various complications of neuralgia, hæmaturia, (which is frequent in the aged,) &c. require appropriate modifications of treatment. In very obstinate cases slight applications of caustic, or the injection of a weak nitrate of silver lotion are often useful. A host of empirical remedies have been tried, and proving sometimes useful by chance, have been erected into a general plan of treatment.

(8.) *Catarrh from Indirect Causes.*—There are a few cases which we cannot always refer to direct causes, but too much importance has been attached to those of an indirect nature, even when the former are detectible, and the treatment has too frequently been directed in reference to these alone. Thus a catarrh of the bladder may occur after the cure of various cutaneous affections, and especially after diseases of the mucous membranes, but, these will almost always be found, connected with *atony of the bladder*. So, too, in many old men, attacks of gout and vesical catarrh are simultaneous or successive, and, in these subjects, the natural disposition to atony of the bladder is strengthened by the repose the malady exacts. By the arrest of transpiration and exanthematæ, which has often preceded catarrh, many authors have explained its occurrence, and Dupuytren accounted for its prevalence among the aged by the harsh condition of the integuments which prevails at that period of life. In all similar cases that our author has seen, he has found irritation at the neck of the bladder, atony of that organ, or some such predisposing cause; but he admits the important aid derived in treatment from the due regu-

lation of the cutaneous functions. The frequent occurrence of the affection in the sedentary and studious is another proof of the correctness of this explanation of the cause.

*Catarrh of the Bladder in Women.*—Little attention has been directed to the occurrence of this affection in women, as they are far less liable than men to lesions of the urinary apparatus, and complain less frequently even when afflicted with them. Yet it is common enough among them, at all ages, and in all conditions, and frequently assumes a very obstinate character. Not only is it found in girls liable to incontinence, but in others in apparent health, but who, upon examination, will be found to have irritability of the neck of the bladder and atony of the organ. It is observed also in difficult early menstruation. The habit of drinking a too small quantity of fluid, and of *resisting the desire to urinate*, are prominent causes. Among new-married women the abuse of coition, or gestation may produce the catarrh in those predisposed, but the case is rare, and only becomes serious by neglect. The worst cases occur in women of nervous temperament, who abandon themselves to unlimited sexual pleasures and spirit drinking.

*In Children.*—It is common in its chronic condition in children, and even may occur in its acute form, which cannot surprise us, when we consider the atonic condition of the bladder at this period of life. It occurs especially in scrofulous and rickety subjects. It is very insidious in its progress; and years may elapse before the discharge becomes purulent, and the constitution gives way. It is easily treated at the commencement by bougies and injections, but then we rarely see it at such stage; and afterwards the irritability of the canal presents many difficulties. Worms, and other irritation of the rectum exasperate the affection.

*Treatment.*—(1.) *Antiphlogistics.*—We must not look upon this as a mere ordinary phlegmasia, to be met with antiphlogistics. These are required in the acute but rare form, but in ordinary cases, although not to be absolutely neglected, they are merely secondary, our principal object being to secure a due expulsion of the urine. (2.) *Narcotics.*—These are of utility introduced by the mouth, rectum, or skin, in order to relieve the neuralgic and other complication: so as to prepare the parts for more direct measures. Carried to excess they induce constipation and debility, and favour the production of atony of the bladder. (3.) *Balsams.*—The author criticises the empirical manner in which Dupuytren employed turpentine, without any reference as to whether organic lesions existed or not. In most of his cases he was obliged to suspend it by reason of the exasperation of the phlegmasia it excited. Mere temporary amelioration has often been registered as a cure, and even where the latter really did occur, it may have been due in part to the improved regimen and circumstances under which the patient was placed. When the catarrh depends upon an excited state of the neck of the bladder, and constipation co-exists, it may act usefully through the medium of the alimentary canal. Moreover, in some slow, chronic inflammations, its stimulating effects

seem to have been beneficial: and towards the end of a long course of treatment, where the original causes of the disease have been removed or diminished, it may exert an influence in changing the condition of the vitality of the parts: but, for this purpose, injections and glysters of cold water, and aperients are usually to be preferred. (4.) *Revulsives*.—Blisters applied to various localities have been recommended, but the author has not derived much benefit from their employment, and they often produce strangury. Antimonial ointment applied to the hypogastrium or sacrum, has succeeded better. He uses neither the seton or cautery. (5.) *Injections of the Bladder*.—These are very useful in removing the deposits, and in restoring the natural sensibility and contractility of the bladder. Pure water, at first tepid, and afterwards employed at a temperature low in proportion as the atony is considerable, is to be thrown in several times daily, in sufficient quantity to excite the desire of expulsion. The number of times may be diminished, and the temperature of the water increased, in proportion as the contractile power of the bladder is restored. When made carefully and slowly, these injections cause little or no pain, and are attended with the most satisfactory results. Various medicated injections have been indiscriminately recommended; the nitrate of silver, however, is a powerful modifier of perverted sensibility. Injections of water must precede its use, and the solution employed must be very weak. When sacculi exist in the bladder, the water injections should be employed after the use of the nitrate, so as to secure its proper evacuation from these receptacles. (6.) *Solid Nitrate of Silver*.—This should be limited to cases which only implicate the neck of the bladder, and when great irritability of this part, conjoined with hæmorrhage, has prevailed, it is often useful, applied however, in the most delicate manner. (7.) *Warm Sulphureous Mineral Waters* seem, when the case has depended upon mere atony and has become obstinate, to be of great utility. When, however, neuralgia of the neck and tumefaction of the prostate exist, retention may follow their employment. Much of the benefit derived arises from the increased quantity of diluent fluid the patient drinks, and on his discontinuing this, he frequently finds all his ailments reproduced.

It is seldom that so useful a *practical* work has issued from the French press of late. The author illustrates every point by abstracts of cases furnished by his own extensive practice in this branch of surgery, nor is he niggardly in referring to the experience of others, among whom our own countrymen hold a conspicuous place. The book is an able protest against the rash surgery too often witnessed in the class of affections to which it relates.

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SIR BENJAMIN BRODIE informs us, in an advertisement, that he has introduced into the present edition the results of his later experience. He adds:—"The present volume is not very much increased in size as compared with its predecessors. Nevertheless, with the exception of the Lectures on Calculi of the Urinary Bladder and Lithotomy, there are few parts of it which remain such as they were formerly. Several errors are, I hope, corrected: some of the views which I had been led to entertain

of disease are modified; and there is a considerable proportion of new matter. In the latter is included a Lecture on the Operation of Lithotomy, on which in the former editions of this work I did not feel myself competent to offer more than a few general observations. I have now ventured to discuss this new mode of treatment more at length, giving some practical instructions for the performance of the operation, which may probably be acceptable to the younger members of our profession, and to those whose minds have not yet been directed to the subject; at the same time endeavouring to assign to it what I believe to be its proper place among the appliances of surgery, and what, if I am not greatly mistaken, will be conceded to it by others, when time and experience shall have dissipated alike the prejudices of those who underrate its importance and usefulness, and of those who hold it to be more useful than it really is."

Sir Benjamin Brodie's contributions to the literature of surgery are so eminently practical, and so valuable to those who prefer facts to theories, that we have never neglected an opportunity of laying them before our readers. And we would take this opportunity of observing, that works of this description should be brought prominently forward, and held up as models to young medical men. The taste of the day would seem to be inclining too much towards compilations, learned, no doubt, and laborious, but adapted for the closet, rather than the field of practice, and better calculated to make men talk than act. In the literary productions of Sir Benjamin Brodie we find a totally different spirit. They contain the knowledge which is taken from the bedside, and can again be taken to it. There is no parade of quotations, no innumerable references to the opinions of others, no transcendental speculations, no ingenious and unsubstantial disquisitions, no extravagant views, no hunting after what is merely new, nor bigotted adhesion to what is merely old, no disposition, in fact, to deviate from that straight path of moderation and of common sense, which leads in the applied sciences, as in the common business of life, to the most successful and solid results.

What we most want in our profession to make one man's knowledge available for many, is acuteness in observing and fidelity in reporting, and both these requisites appear to exist in Sir Benjamin Brodie. Those who enjoy the pleasure of his acquaintance are aware of his quickness in appreciating the subtle indications of disease, a quickness which, probably, more than any other quality, has placed him in his proud position. And his truthfulness in relating what he has remarked, is attested by the healthy popularity of his works, and the general stability of his opinions. In giving, them, a prominent place to those opinions, and as ample a notice as possible to those works, the critic is not merely disseminating a certain quantity of truth, but he is effecting a more extensive and a higher object, in inculcating a sound and right spirit of investigation.

The present edition of Sir Benjamin Brodie's work contains some new matter, and differs so much from its predecessors as to lead us to examine it with care, and lay what is fresh before our readers. The nature of the task will preclude, of course, a circumstantial analysis, and give it somewhat of a desultory and unconnected character. This, however, is equally unavoidable and unimportant.

The first four Lectures are occupied with the consideration of

*Stricture of the Male Urethra.*

The observations on Abscess in the Perineum, and fistula in consequence of Stricture, are more extended than before.

Sir Benjamin thus describes the ordinary course of the affection. The patient, he says, complains of more than usual difficulty in voiding his urine; but the difficulty does not amount, at least in the first instance, to an absolute retention. Perhaps he has a shivering. There is a sense of fulness in the perineum, and some degree of deep-seated induration is perceptible in one part. This gradually increases, and a tumour presents itself under the skin of the perineum, surrounded with more or less of œdematous effusion, especially into the scrotum. The skin becomes inflamed, and the fluctuation of fluid is perceptible underneath. An abscess bursts, or is opened with a lancet, and a considerable quantity of putrid pus is discharged. Here the œdema of the neighbouring part subsides. Pus continues to flow through the orifice of the abscess, and after some time it is observed that urine flows through it also. The discharge of pus diminishes, but the urine flows in larger quantity; and whenever the patient makes water, part escapes through the natural channel and part by the new opening. The abscess has evidently a communication with the urethra, behind the stricture. If you have an opportunity of dissecting the diseased parts while the abscess is recent, you find it to open into the urethra by a ragged irregular orifice. If you examine them at a later period, the orifice in the urethra is found to be smooth, regular, and rounded at the margin; the external orifice in the perineum is reduced to a narrow diameter, and is seen in the centre of a button-like projection of the skin: and the abscess itself is contracted, perhaps reduced to a narrow passage, with a smooth surface, which presents somewhat of the appearance of it being lined by a mucous membrane. We now say that the case is one of *fistula in perineo*. The whole of these phenomena are easily explained. The urethra, constantly teased by the pressure of the urine against it, ulcerates behind the stricture. If the stricture had been completely closed, as in a case of retention of urine, an extensive extravasation of urine would have immediately taken place; but under the existing circumstances this does not happen, and only a moderate quantity, perhaps not more than a few drops, dribbles into the cellular membrane, sufficient to induce inflammation and suppuration and no further local mischief. A *fistula in ano* is formed in the same manner, by ulceration of the rectum allowing the escape of a minute quantity of *feculent matter* into the neighbouring textures.

Sir Benjamin goes on to remark that sometimes the abscess in the perineum is accompanied by typhoid symptoms. If the abscess is opened, the matter that issues is putrid and urinous—if the opening is deferred the patient may die.

"I have described," continues our author, "the simplest form of the urinary abscess. But it is often more complicated. It is not always confined to the perineum. Sometimes it makes its way forward through the upper part of the scrotum, and presents itself on the lower part of the penis, between the scrotum and the glans. At other times it burrows in the opposite direction, forming a

large collection of matter in the nates, or it may burst in the groin, or in the scrotum. In one case, in which I had the opportunity of examining the body after death, I found a large abscess in front of the pubes, extending half-way towards the navel; another among the adductor muscles of the left thigh; and a third among the muscles at the upper part of the right thigh, as far outwards as the *foramen ovale* of the ischium; the periosteum having been destroyed, and the bone itself rendered carious to a considerable extent: and all these abscesses could be traced into an abscess in the perineum, communicating with the urethra behind a stricture by a small orifice. In another case which I attended with Mr. Samuel Cooper, there was a *fistula in perineo*, communicating with a large abscess of the pelvis on one side of the bladder.

I have seen a few cases in which an abscess of this kind had made its way into the rectum, forming a fistulous communication, between it and the urethra. If such communication be of large size it is a source of great distress, as feculent matter occasionally passes through it from the rectum into the urethra. If it be small, however, the absolute inconvenience is trifling, and the patient is rendered sensible of its existence only in consequence of a small quantity of air escaping occasionally by the urethra; and this may continue, without any further symptoms supervening, for many years." 19.

To our anatomical readers the directions taken by the abscess will be explicable by the relations of the fasciæ.

"There is one form of abscess of the perineum, which may be compared to what has been called a *blind fistula of the rectum*; the abscess having an opening into the urethra and none externally. Such an abscess may at one time be inflamed, swollen, and tender; then these symptoms may subside, but only to recur at a future period; and this state of things may continue for many years. I conclude that in these cases the abscess is formed in the usual way, by ulceration of the urethra and the infiltration of a small quantity of urine into the cellular texture; but that, when a certain quantity of matter is collected in it, it bursts into the urethra, instead of finding its way to the surface, the communication being of sufficient size to prevent any considerable accumulation of matter afterwards.

A fistula of this description is a source of inconvenience and mischief, and of nothing else. It is not so with a fistula which has an external opening. The latter answers, in some measure, the purpose of a safety-valve to the bladder, enabling the patient to void his urine even where the stricture is closed, and lessening the liability to retention. But even in this case the good is not unmixed with evil. It occasionally happens that the external orifice of the fistula becomes inflamed and swollen, or that it actually heals, and that this is followed by an accumulation of matter within, attended with many or with the whole of the symptoms which marked the first attack of the disease. And there may be even greater mischief ultimately. Mr. Vincent and myself attended a gentleman with a *fistula in perineo*, which he had neglected for many years. At last he observed that the callosity at the margin of the fistula had begun to increase; and it went on increasing so that it ultimately extended to the scrotum and penis. When we were called in we found him with a malignant tumour, affecting the perineum, scrotum, and penis, which had evidently had its origin in the fistula. He ultimately died in great distress and misery." 20.

It has appeared to us, that these abscesses in the perineum occasionally take place independently of any ulceration of the urethra, or escape of the urine. A patient has inflammatory gonorrhœa, or stricture, or both. A swelling forms in the perineum, in the course of the urethra. It is opened. The pus is not appreciably mixed with urine, nor does any urine



subsequently issue from the opening. The symptoms and the course of the disorder indicate sufficiently the connexion of the abscess with the urethra, while no evidence exists of ulceration of the latter. Nor is this inconsistent with analogy. In inflammatory gonorrhœa, we meet with abscess in the corpus spongiosum, or even in the subcutaneous cellular membrane of the penis. Irritation of the rectum will give rise to suppuration in the ischio-rectal fossa, and irritation of the mucous membrane of the cæcum to abscess in the iliac fossa. Inflammation of the mucous membrane of the fauces will occasion the formation of matter in the cellular tissue, external to them, while one of the most deadly consequences of laryngitis arises in the same manner. From direct observation, then, as well as from reasoning, we are inclined to believe that, in cases of stricture, as well as in other inflammatory affections of the urethra, abscess in the perineum may occasionally form without ulceration of the walls of the canal.

*Combination of Stricture with Enlarged Prostate Gland.*—Speaking of this, Sir Benjamin remarks, that, although simple chronic enlargement of the prostate usually relieves a stricture, yet, where the disease of the prostate goes beyond a mere enlargement, and suppuration has taken place in its substance, an opposite effect is produced on the stricture; the abscess itself becoming a source of irritation, rendering the stricture more sensitive and more liable to spasm than it would have been otherwise.

No doubt persons are often said to labour under stricture in combination with enlarged prostate, when there is no stricture at all. The blunder, indeed, is not confined to the combination of the two complaints—it extends to either singly. Many persons are treated for stricture who never had any, and for enlargements of the prostate which exist only in imagination.

*Introduction of the Bougie.*—We are tempted to introduce Sir Benjamin's directions for the introduction of the bougie. "The best kind of bougie," he observes, "is that in common use, made of plaster spread on linen, and rolled up. It should be smooth on the surface, and neatly rounded at the extremity. The plaster bougie should be rubbed until it becomes warm, so that it may be moulded by the hand, and bent into the form of the urethra. Thus bent, it is much to be preferred to the elastic bougie, which is made of elastic gum on the outside and of catgut within. The latter may, it is true, be bent into any form; but it is elastic, and however you may bend it, it always regains its straight figure; and hence it is not well constructed for being passed along the curved canal of the urethra. The bougie which is used for the purpose of examining the urethra should be of a full size, that is, large enough to fill the urethra without stretching it. A small bougie may deceive you in two ways: it may pass through a stricture, and thus lead you to believe that there is no stricture, when there really is one; or it may have its point entangled in the orifice of one of the mucous follicles of the urethra, or in some accidental irregularity of the canal, and lead you into the opposite mistake of supposing that there is a stricture where none exists. If you use a bougie of the size of the urethra you are not at all liable to the first error, and you

are much less liable to the second than you would be otherwise. The bougie should be cylindrical. There is no advantage in any bougie except a very small one, being conical. A conical bougie becoming larger towards the point which is held in the hand, is likely to extend forcibly the orifice of the urethra, and to excite inflammation in it.

The existence of stricture in the anterior part of the urethra, or at its orifice, is so easily ascertained that it seems unnecessary to offer any observations on the subject. The following rules, then, are to be considered as relating especially to those cases in which it is a question whether there be or be not a stricture in the membranous part of the urethra, or in its immediate vicinity.

I generally find it best to introduce the bougie with the patient in the erect posture, keeping the extremity of it, which I hold in my right hand, close to his groin, and passing it until it will go no further in that direction; after which, by turning the instrument, I bring it horizontally forwards, and push it gently towards the bladder. If the patient has well-marked symptoms of stricture, and the bougie meets with an obstruction in some part of the urethra, you may be justified in considering this as sufficient to indicate the existence and situation of the disease. If, however, the patient has no such well-marked symptoms, you should not advance at once to the conclusion that there is a stricture because the bougie does not immediately enter the bladder. The extremity even of a large bougie may hitch in some irregularity of the mucous membrane; or if you are at all rough in the use of it, a spasm may be induced in the membranous part of the urethra, or in the muscle which surrounds it, preventing the bougie from being passed, although no such cause of obstruction exists at other times. Under these circumstances you should introduce a silver catheter, or what is better, a metallic sound, having a moderate curvature, and warmed to the temperature of the body; and it is probable that, if there be no stricture, the metallic instrument will be easily introduced, although the plaster bougie could not be introduced at all. In short, where there are no decided symptoms of stricture you ought not to adopt the opinion that a stricture exists without having made a very careful examination of the urethra. Inattention to this rule has led to many patients being subjected to a course of treatment for stricture who had never laboured under the disease."

Sir Benjamin makes some just observations on the tendency to fashion too prevalent in medicine. "There is," he says, "a fashion in diseases, or rather (to speak more properly) there is a fashion in the opinions entertained as to the prevalence of particular diseases, and when the attention of the medical profession and the public has been especially directed to a certain order of cases, such cases are almost invariably supposed to be much more common than they really are. A very few years ago it was so with respect to the disease which we have now under consideration. If a man had a troublesome gleet; if he had an indurated testicle; if he had a priapism at night; if he had a frequent inclination to void his urine; if he was impotent, or believed himself to be impotent; if the stream of urine was not perfectly cylindrical; or even if he was liable to an herpetic eruption on the prepuce; he was supposed by many surgeons to be labouring under a stricture of the urethra, and was at once subjected to the

unnecessary use of bougies. The number of persons who at this period were supposed to have a stricture of the urethra, and who really had no such disease, and many of whom had no disease at all, was not less than that of the young females who, at a still later period, have been the victims of another mischievous delusion, being laid up for years together on a sofa, under the supposition that they laboured under disease of the spine or hip, when in reality they suffered only from hysterical pains and spasms, which air and exercise would have cured, but which confinement and nursing, and the attendance of physicians and surgeons, have only tended to aggravate."

*Treatment of Retention from Spasmodic Stricture.*—Sir Benjamin recommends the immediate and direct recourse to mechanical means.

"Begin," he says, "by taking one of the smallest gum catheters, which has been kept for a considerable time on a curved iron wire, and which retains the curved form after the wire is withdrawn. Introduce it without the wire; and, as it approaches the stricture, turn the concavity of the catheter towards the pubes, elongating the penis at the same time by drawing it out as much as possible. It is not very improbable that it will pass through the stricture, and enter the bladder. The urine will then flow through it in a fine stream, and the patient will obtain immediate and complete relief.

If you fail with the small gum catheter, try, not a plaster, but a small catgut bougie. Let this be well made; that is, firmly twisted, nicely rounded at the extremity, and every where well polished. Observe the same rule of elongating the urethra, and it will probably enter the stricture. It is not necessary that the catgut bougie should pass on to the bladder; it is sufficient if the stricture grasps, or holds it. Let it remain in the stricture until there is a violent impulse to make water. Then withdraw the bougie, and the urine will follow it in a small stream. If the patient empties the bladder, the object is attained; but, otherwise, re-introduce the catgut bougie, or rather introduce another of the same size (for a catgut bougie which has been once used is not fit to be employed a second time); and let the patient retain this second bougie as long as he can. If the straight catgut bougie cannot be passed, you will often succeed in effecting its introduction, by bending the point of it thus:



This contrivance enables you to keep the point sliding against the upper surface of the urethra, avoiding the lower part, in which the obstruction is always most perceptible, and in which the bougie is most likely to become, as it were, entangled.

Even where you have failed to relieve the patient by means of the cutgut bougie, you will often succeed in introducing a silver catheter, or an elastic gum catheter mounted on a firm iron stilet, into the bladder. The catheter employed on this occasion, if the stricture be of a recent formation, should be nearly of the full size of the urethra; but if the stricture has been of long duration, it should be considerably smaller. The common silver catheter is not so well adapted for the purpose as that which I now show you. You will observe that it is shorter and less curved than usual; and that it is fixed in a wooden handle, which renders the instrument more manageable than it would be otherwise. If you use an elastic gum catheter, the iron stilet should have a flattened handle, resembling that of a common sound. You should pass it as far as the obstruction, and

having ascertained where it is situated, withdraw the catheter a little, a quarter of an inch for example, and then, as you pass it on again towards the bladder, keep the point sliding against the upper part of the urethra, which is towards the pubes, avoiding the lower part, which is, of course, towards the perineum. Be careful to employ no violence. If you lacerate the urethra, so as to cause hæmorrhage, you will be defeated in your object. Press the catheter firmly, but gently and steadily, against the stricture, keeping in your mind the anatomical position of the parts, and being careful to give the point of the instrument a right direction. When the pressure has been thus carefully continued for some time, the stricture will begin to relax. It will allow the point of the catheter to enter, and at last to pass completely through it into the bladder. In some instances this will be accomplished in the space of one or two minutes; while in others it may be necessary to persevere for a quarter of an hour. As soon as the catheter has reached the bladder, the patient's sufferings are at an end, as the bladder becomes completely emptied. If you have used the elastic gum catheter, it may be prudent to allow it to remain in the urethra and bladder for one or two days, or even for a longer period; and this will go far towards accomplishing the cure of the stricture.

If you are skilful and prudent in the management of the catheter, you will generally succeed in introducing it into the bladder; but if you fail in doing so, the attempt to introduce it may still be useful to the patient. The pressure of the catheter against the stricture, if kept up for a considerable time, exhausts the morbid irritability of this diseased portion of the urethra. The spasm becomes in a considerable degree relaxed, and if you withdraw the instrument when the patient has a violent impulse to make water, the urine will follow in a stream. Observe, that I am taking it for granted that you are careful to avoid all violence. If the membrane of the urethra be lacerated, the probability is, that the spasm will not give way; and if, under these circumstances, you persevere in the attempt to introduce the catheter, you will but aggravate the evil which it is your object to remove.

The remedy on which you are most to rely, where these mechanical means fail, is opium. From half a dram to a dram of laudanum may be given as a clyster in two or three ounces of thin starch. If this should not succeed, give opium by the mouth, and repeat the dose, if necessary, every hour until the patient can make water. According to my experience, the cases in which the stricture does not become relaxed under the use of opium, if administered freely, are very rare. The first effect of the opium is to diminish the distress which the patient experiences from the distention of the bladder. Then the impulse to make water becomes less urgent; the paroxysms of straining are less severe and less frequent; and after the patient has been in this state of comparative ease for a short time, he begins to void his urine, at first in small, but afterwards in larger quantities.

It is customary in these cases to employ the warm bath. It is, indeed, sometimes useful, but you can place no dependence on it as compared with opium. It is not sufficient that your patient should sit in a hip bath: the bath, to be at all efficient, must be complete; his whole person ought therefore to be immersed and he should remain in it for half an hour, or an hour, or longer, unless he previously becomes faint. Bleeding from the arm is seldom required in cases of retention of urine from stricture; but, in some instances, even where other means have failed, taking blood from the perineum by cupping gives immediate relief.

Purgatives require some time to produce their effect, and, in most cases, at the period of your being called in, the symptoms are too urgent to admit of this delay. Where, however, a stricture is chiefly spasmodic, and the retention follows the too great use of fermented liquor or spirits, I would advise you, if you are sent for on the commencement of the attack, to prescribe a draught of infusion of senna, with the tartrate of potass and tincture of jalap. As soon as

this has fully operated, and the bowels are emptied, give thirty or forty drops of tincture of opium by the mouth, or order an opiate clyster to be administered, and, in all probability, the attack will subside.

After all, there is no absolute rule as to the treatment of retention of urine from stricture. One person is relieved in one way, another in another; and you will do well in each case to bear in mind the particular mode of treatment which has proved of service in order that you may at once resort to it, if you are called a second time to the same patient, under the same circumstances. In one instance, you will be able to pass a catgut bougie, and not a catheter; in another you will be able to pass a catheter, and not a catgut bougie. One individual is relieved by opium, another by the warm bath. A gentleman of my acquaintance, who was subject to attacks of this description for a considerable time, almost always began to make water after a pint of warm water had been thrown up as a clyster. To show what various treatment is necessary, I have been in the habit of mentioning the following case. A gentleman, who had been long in hot climates, laboured under an old stricture of the urethra. He was able to pass a bougie for himself; and he did this at regular periods, and for a long time experienced little or no inconvenience from his disorder. One night, however, he was seized with retention of urine, and called me out of my bed in consequence. I introduced a gum catheter, which entered the bladder with perfect ease, and drew off the urine. He called me up another night, and another, and another still; and one night he called me up twice. At last it occurred to me that he always sent for me on the alternate nights; and on inquiry, I found that the attack of retention regularly came on about twelve o'clock, and even though the catheter had entered the bladder, the spasm did not relax, so as to enable him to make water by his own efforts, until five or six in the morning. I determined then to treat the case as we do many other intermitting and periodical diseases; and I prescribed him the sulphate of quinine. The first night after he began to take it he had an attack of retention; but he had no attack afterwards." 41.

When an operation becomes indispensable, which Sir Benjamin thinks it must *rarely* be, he is of opinion that puncturing the bladder from the rectum is applicable to the greatest number of cases. But those who operate frequently must often operate unnecessarily.

*Treatment of Stricture in the Anterior part of the Urethra.*—Sir Benjamin observes that a *stricture at the orifice of the urethra* may be dilated by means of a common bougie, or a short metallic instrument; the size of the bougie being gradually increased, and the introduction being repeated daily or on the alternate days according to circumstances. The process of dilation is, however, in many instances, attended with much inconvenience to the patient. In those cases, especially, in which the contraction began in early life, every introduction of the bougie causes considerable pain; at the same time that the disposition to contract is so great that the operation requires to be repeated almost daily. The consequence is, that the part is kept in a constant state of inflammation, and, between the disease and the remedy, is a source of incessant annoyance to the patient. In a case of this sort, which was extremely troublesome, Sir Benjamin determined at once to divide the contracted part of the urethra. This was easily accomplished by means of a pair of knife-edged scissors, one blade with a blunt point being introduced into the urethra, and the division being made in the situation of the Frænum. No hæmorrhage followed the operation. A piece of lint was kept between the cut surfaces to prevent their union, and in about ten days they were cicatrized, being covered by

what had already assumed a good deal of the appearance of a mucous membrane.

Strictures in the interior part of the urethra, but behind the orifice, require to be mechanically dilated, by the introduction of bougies or metallic instruments. Sometimes the patient obtains relief on very easy terms, the dilatation being readily accomplished, and the use of a bougie once in three or four days being sufficient to prevent a recurrence of the contraction. At other times, however, the disposition to contract is so great, that it becomes necessary to introduce the bougie once or twice daily; and indeed, Sir Benjamin has known cases in which the patient was seldom able to expel his urine until the bougie had been employed.

After speaking of the *common wax bougie* which Sir B. Brodie thinks the preferable instrument where it can be used, he observes that he does not employ the common flexible metallic bougies, as they are liable to lose the shape which you have given them during their introduction, and, in fact, are at the same time too flexible and too inflexible for any useful purpose. Sir Benjamin's bougies, if of a small or middle size, are made of solid silver; the larger ones of silver or steel, or steel plated, or of a composition similar to, but firmer than, that of the flexible metallic bougie. These sounds should be very slightly curved, and for ordinary cases not more than eight inches and a half or nine inches long, exclusive of the handle. You may use them as you would use the common bougie for the purpose of gradually dilating the structure, beginning with one of a small size, and gradually proceeding to those which are larger. These metallic instruments are applicable: 1st, to cases of old and indurated strictures, which the common bougie is incapable of dilating; 2dly, to those in which, in consequence of some improper management, a false passage has been formed, into which the point of a common bougie will easily penetrate, but which an inflexible instrument may be made to avoid; 3rdly, to those in which from long-continued disease, and without any previous mismanagement, the urethra has become distorted, and its surface irregular; and 4thly, to several recent cases in which the smooth polished metallic surface gives less pain to the urethra, and is less likely to induce spasm, than the softer but less smooth surface of a common bougie.

In very old and inveterate cases, where other means have failed, a full-sized instrument will often succeed. "The sound should be rather above than below the middle size. Of course the same rule in this respect does not apply in every instance, but that which I generally find it most convenient to employ is only a moderate curvature. It is made of silver, fixed in a flat wooden handle, being nine inches in length from the handle to the point; no part of it is more than one fifth part of an inch in diameter, and at the point the diameter is reduced to one sixth of an inch.

In using the sound you should pass it carefully as far as the stricture, and the press the point firmly and steadily against it, taking care that it is directed in the line of the urethra towards the bladder. The pressure is to be continued for five, ten, or fifteen minutes, or even longer, according to circumstances; and this process is to be repeated once in two or three days. If a false passage exists, it is probably on the lower part of the urethra towards the perineum; and it is in this situation that, by careless management, one may be easily made. To avoid this mischief,

you must direct the point of the sound especially to the upper part of the stricture next the pubes. The pressure should be as much as can be made without the urethra being lacerated, and without inducing any considerable degree of pain. In some instances the stricture has little or no sensibility, in others it is exquisitely tender; and in latter cases the pressure should be very trifling at first, but it may be gradually increased as the tenderness subsides [as it will do] under its influence.

The result of this treatment is, that at each operation the anterior part of the stricture seems to become relaxed to a greater or less extent; and that at last the instrument penetrates entirely through it and enters the bladder. The period at which this happens, of course, varies in different cases. The permanent change of structure may be trifling, the stricture being chiefly spasmodic, and one or two applications of the sound may be sufficient. There may be much gristly induration, occupying considerable proportion of the urethra, and many applications may be required. A patient was under my care, in whom the stricture was surrounded by a mass of hard substance, which could be distinctly felt in the perineum, apparently an inch or an inch and a half in length. The stream of urine was of the smallest size, and varied so little that it was evident that there was little or no liability to spasms. For many years before I was consulted no instrument had been made to enter the bladder; and the ordinary methods, after a long trial, failed in my hands, as they had done in those of others. At last I succeeded by the method which I have just described, but not until I had persevered in it for many months."

After describing the method of treating stricture by means of the *gum catheter*, which is left in the urethra, Sir Benjamin points out the cases to which he believes it to be applicable. They are, 1st. Where time is of much value, and it is of great consequence to the patient to obtain a cure as soon as possible.

2dly, Where a stricture is gristly and cartilaginous, and therefore not readily dilated by ordinary methods.

3dly, Where, from the long continuance of the disease, the urethra has become irregular in shape, or where a false passage has been made by previous mismanagement. Under these circumstances, if you can succeed in introducing a gum catheter, and let it remain for a few days in the bladder, you will find your difficulties at an end; their regularities will disappear, and the false passages will heal.

4thly, Where a severe rigour follows each introduction of the bougie. This disposition to rigour is such, that it is sometimes impossible to proceed with the treatment in the ordinary way. Observe, in these cases, when the rigour takes place. It seldom follows the use of the bougie immediately. It almost always occurs soon after the patient has voided his urine, and seems to arise, not as the immediate effect of the operation, but in consequence of the urine flowing through the part which the bougie has dilated. Now, if, instead of a bougie, you use a gum catheter, and allow it to remain, the urine flowing through the catheter, the contact of it with the urethra is prevented, and the rigour is prevented also.

Sir Benjamin conceives that the *caustic bougie* is applicable to the following cases: 1st, Those of spasmodic stricture, where two or three applications of the caustic may be sufficient to relieve all the urgent symp-

tom. 2dly. Some cases of old stricture, in which there still is a considerable disposition to spasm. In these last cases apply the caustic two or three times, and no oftener. It will probably relieve the contraction as far as it is spasmodic, and thus enable you to proceed more advantageously, with the use of the bougie or metallic sound. 3dly. The caustic may be used very properly in some cases of stricture which are endowed with peculiar irritability, in which every application of the common bougie induces severe pain, or brings ~~on~~ spasm, preventing it entering the stricture. Two or three applications of the caustic may be sufficient to deprive the stricture of that unnatural sensibility which otherwise would have foiled your efforts to effect a cure. Yet our author seldom employs caustic for these reasons: 1st Although the caustic often relieves spasm, it also very often induces it. It is true, that in many instances it enables a patient to make water with more facility; but in many instances, also, it brings on a retention of urine. 2dly, Hæmorrhage is a more frequent consequence of the use of the caustic than of the common bougie, and it sometimes takes place to a very great and to an almost dangerous extent. 3dly, Where there is a disposition to rigors, the application of the caustic is almost certain to produce them; and frequently the application of the caustic induces rigors where there had been no manifest disposition to them previously. 4thly, Unless used with caution, the application of caustic may induce inflammation of the parts situated behind the stricture, terminating in the formation of abscess.

*Division of Stricture.*—Sir Benjamin remarks of Mr. Stafford's method of dividing strictures that there are very few cases for which it can be needed. But he relates an instance in which he adopted a modification of it with success.

*Case.*—"A man, forty years of age, was admitted into St. George's Hospital, in the year 1835, labouring under a stricture, near the bulb of the urethra complicated with a fistulous opening in the perineum. When he voided his urine, a very small quantity came away by the urethra, the greater part being discharged by the perineum. The disease had existed for more than twenty years, and the abscess in which the fistula had originated had followed an injury received while riding on horseback thirteen years ago. For many years no instrument had been passed through the stricture. At last he became a patient under the late Mr. Earle, in St Bartholomew's Hospital, where he remained under treatment for five months, but with no more success than formerly.

Finding after repeated trials that no instrument could be made to penetrate through the stricture, with the concurrence of my colleagues, I performed the following operation:—

The patient having been placed in the same position as in lithotomy, a full-sized plaster bougie was introduced, and held by an assistant with its extremity resting against the stricture. I then made an incision in the perineum, dilating the fistulous sinus, and laying open the membranous part of the urethra as far forward as the stricture, the exact situation of which was marked by the bougie. The bougie was then withdrawn, and an instrument was introduced in its place, consisting of a straight silver tube, closed at its extremity, except a narrow slit, through which a small lancet could be made to project by pressing on a stilet which projected the handle of the instrument. The round extremity of the tube being pressed against the anterior part of the stricture, I applied the fore-finger



of the left hand, introduced through the wound in the perineum and urethra, to its posterior surface. The pressure of the instrument being distinctly communicated to the finger through the substance of the stricture, the lancet was protruded and the stricture was divided. A silver catheter was then easily introduced through the urethra and the divided stricture into the bladder, and allowed to remain there. The urine of course flowed through the catheter. At the end of two days the silver catheter was removed, and replaced by one of elastic gum. The wound in the perineum gradually healed, and the patient ultimately recovered, making water in a full stream, and being able to introduce a sound of a full size into the bladder, so as to prevent a recurrence of the contraction.

The instrument used on this occasion was ten inches in length, exclusive of the handle, and rather more than one quarter of an inch in diameter. The lancet measured three sixteenths of an inch at its broadest part; it terminated in a sharp point, and could be made to project by pressing a button on the other end of the silet to which it was attached to the length of half an inch, returning to its place within the silver tube when the pressure was withdrawn by the action of a spiral spring. In using it, one cutting edge of the lancet was directed towards the pubes, the other towards the perineum. The advantages of dividing the stricture by this method, as compared with other methods of operating, are 1st, that the free opening made in the perineum prevents all danger from infiltration of the urine; 2dly, that the fore-finger of one hand, being applied to the posterior surface of the stricture, serves as a guide for the lancet, and enables you, with the exercise of a little skill and caution, to make an exact division of the stricture." 67.

*F's'u'æ in Perineo.*—After pointing out the necessity for freely dilating the natural passage, before the fistula can have a chance of closing, Sir Benjamin adds his latest experience. "I formerly," he says, "have advised the patient never to void his urine without the aid of the catheter; but I am now inclined to believe that the irritation thus kept up tends, on the whole, to delay rather than to expedite the cure. At other times I have kept the patient in bed for some weeks, with an elastic gum catheter constantly in the urethra and bladder; but I cannot say that, with my present experience, I have much more faith in this mode of treatment than in that which I mentioned before. After a few days the urine generally begins to flow by the side of the catheter, which does not therefore answer the purpose for which it was introduced, of preventing its escape by the sinus. Then in many cases the catheter causes an abundant suppuration of the urethra; and the purulent discharge, finding its way into the sinus, prevents it from closing as much as it would be prevented by the contact of the urine."

*B'ind Fistula in Perineo.*—Sir Benjamin advises the following method of treatment. Watch for the opportunity when matter is collected in it, and then establish an external opening by dividing the integuments over it with a lancet, so as to convert it into a fistula of the ordinary kind. There are some of these cases, however, the treatment of which requires a more particular explanation. A patient may apply to you who perhaps has had gonorrhœa formerly, followed by a slight obstruction of the urethra, complaining at the same time of a discharge from the urethra, which he calls an obstinate gleet. You examine the perineum, and you find in it a small tumour, not larger than a horse-bean or filbert. It is at some distance from the surface, and the patient says that it has been co-existent

with the gleet, and that it is sometimes inflamed and tender. Now this little tumour indicates the existence of a blind fistula. There is a small orifice in the urethra, and a narrow channel leading from it into the centre of the tumour; and every time that the urine flows, a very small quantity finds its way into this channel, escaping from it immediately afterwards by regurgitation into the urethra. In consequence of the smallness of the cavity, and the quantity of solid matter deposited on its outside, the fluctuation of fluid in it is not perceptible. I have known this state of things to continue, producing more or less occasional inconvenience, for many years. The first thing necessary to the cure is to make an opening in the perineum leading into the cavity in the centre of the tumour. But this may not be very easily accomplished, on account of the smallness of the cavity. You should introduce the lancet somewhat obliquely, so as to divide the tumour as nearly as possible through its centre. Then introduce some lint, so as to prevent the wound uniting by the first intention. After three or four days you may remove the lint, and then you will ascertain whether you have done what was required, by observing whether, when the patient voids his urine, any portion of it flows through the opening which you have made. If this be the case, nothing further is required than that the stricture should be dilated in the usual way. If, however, no urine flows through the opening, you may proceed thus:—Introduce a piece of caustic potash through the wound into the centre of the tumour, so as to make a considerable slough. A portion of the tumour being thus destroyed, the probability is that, when the slough has separated, it will be found that the central cavity is exposed, and that you have accomplished the object which you had in view.

*Obstructions of the Ure'hra, arising from Mechan'cal Injury.*—Sir Benjamin makes some valuable observations on this subject.

These obstructions may occur in various parts of the urethra, and may be produced in various ways.

1. A boy contrived to slip his penis into a small metallic ring. The swelling of the glands made its removal difficult, and when this was at last accomplished, it had caused ulceration of the skin and *corpus spongiosum*, extending into the urethra. As the ulcer healed, the urethra became contracted; and when the patient was admitted into the hospital some time afterwards, there was a small fistulous orifice in the middle of a hard cicatrix, through which the greater part of the urine was discharged, while a common probe was with difficulty passed from the external orifice through that portion of the urethra which was included in the cicatrix.

2. A more frequent seat of the obstruction is that part of the urethra which is immediately below the pubes, where the mucous membrane is especially liable to suffer from a blow, compressing it against the hard substance of the bone. In some cases these obstructions are formed where there is no evident injury of the integuments or the other superficial parts of the perineum.

3. In other cases, a deep wound of the perineum may extend into the urethra. If the urethra be only partially divided, Sir Benjamin concludes, that no more mischief will ensue there after the operation of

lithotomy; but if the division be complete, it is difficult to conceive that in the progress of the cicatrization a contraction of the urethra shall not ensue.

4. But there are cases of more frequent occurrence, in which a blow on the perineum has lacerated the urethra, contused the parts between it and the skin, caused an effusion of blood into the perineum and scrotum, some portion of urine becoming infiltrated into the cellular membrane afterwards; the result of the whole being the formation of an abscess, and the destruction of the injured parts by sloughing to a greater or less extent. Here, as the sore heals, a hard, gristly cicatrix is generated, adhering to the pubes, with an orifice in the centre, through which the whole or the greater part of the urine is discharged.

The condition of a patient under the circumstances which have been described is much worse than that of one who labours under a perineal fistula connected with an ordinary stricture of the urethra. The difficulty of voiding the urine is more constant; it is liable to be increased, so as to become a complete retention, from attacks, not of spasm, but of inflammation, producing at the time much pain in the perineum, and followed by a fresh accumulation of matter beneath the cicatrix; and, in addition to all this, the treatment of these cases is not less troublesome to the surgeon than it is distressing to the patient, and for the most part does not lead to the same satisfactory results as that of ordinary stricture.

Sir Benjamin gives the following directions with regard to *Treatment*.

"In all cases," he says, "in which there is reason to believe that the urethra has been divided or lacerated in consequence of an injury inflicted on the perineum, it is the duty of the surgeon not only to look at the great and immediate danger, but to guard against future ill consequences; and much may be done at this period towards preventing a most serious inconvenience, which would be relieved with difficulty afterwards. If there be a penetrating wound, in which the urethra is probably implicated, an elastic gum catheter should be introduced with the least possible delay, and allowed to remain in the urethra and bladder until the healing of the wound is far advanced, or, at all events, until it is ascertained that the urethra has not suffered; the catheter being, however, occasionally removed for a limited time, if it seems to act as a source of irritation.

In cases of contusion of the perineum, when the effusion of blood in the perineum and scrotum, and more especially the discharge of blood from the urethra, or any other circumstances, lead to the suspicion that the urethra has been lacerated, the same treatment should be had recourse to; the gum catheter should be introduced as soon as possible, and allowed to remain for at least some days after the occurrence of the accident. The extravasation of blood does not in itself justify the making an incision in the perineum; and indeed, according to my experience, there can be no worse practice than that of making an incision in a case of simple ecchymosis, either in this or in any other situation. But where such extravasation exists, there is always reason to apprehend that there may be further mischief; the progress of the case, therefore, should be carefully watched, and on the first appearance of any symptoms which might be supposed to indicate that urine had escaped into the cellular membrane, or that suppuration had begun to take place, a staff should be introduced into the urethra instead of the gum catheter, and a free incision should be made from the perineum into it, the gum catheter being replaced afterwards.

But it may be that these measures of precaution have not been adopted in the first instance, and that you are not consulted until after the lapse of a considerable time, when the wound or laceration of the urethra is already healed, leaving the urethra contracted in the situation of the cicatrix. Here you may perhaps succeed in gradually dilating the urethra, as where there is an ordinary stricture. But in a case which I have already mentioned, I have stated that 'this was not accomplished without a great deal of local and constitutional disturbance;' and so it has been in all the cases of this kind which have fallen under my observation. Nor will the occurrence of such difficulties be a matter of surprise to any one who bears in mind that here the object is to dilate, not a genuine stricture, but a cicatrix, of the urethra, and who has observed how the cicatrix of an old sore leg inflames and cracks when the subjacent muscles begin to increase in bulk from exercise, or how the endeavour to extend forcibly the contraction after an extensive burn produces the same result. It may be that these difficulties are insuperable under the method of treatment by simple dilatation; and under these circumstances, a small staff having been introduced into the bladder, the cicatrix of the urethra should be divided by an incision from the perineum, a gum catheter being introduced afterwards, and allowed to remain until the wound is healed over it. But even then much remains to be accomplished. The cicatrix has still a greater disposition to contract than an ordinary stricture; the bougie or catheter must be had recourse to almost daily, and the patient must be contented if he can persevere in the use of instruments of a moderate diameter, as the urethra will invariably resent the attempt to keep it dilated by those of large dimensions." 83.

The condition of the patient is improvable, where the injury of the urethra is limited. But where there has been actual loss of some portion of the canal, the patient must either be content to void the whole of his urine by the perineum, or submit to an operation for establishing a communication between the anterior and posterior portions of the urethra. This operation is best explained by a case.

"A young man, in making a leap on horseback, received a violent blow on the perineum from the pommel of the saddle. The immediate consequence of the injury was hæmorrhage from the urethra, and this was followed by extravasation of urine and sloughing of the perineum to a considerable extent. A catheter was at first introduced into the bladder, but it was afterwards removed. The sloughs having separated, the sore in the perineum gradually closed, a small fistulous opening only being left immediately behind the scrotum, through which the whole of the urine was discharged. He was in this state seven months after the occurrence of the accident, when he arrived in London, and Mr. Baker advised him to have my opinion on his case.

On introducing an instrument into the urethra I found an obstruction of the canal immediately below the pubes. Several ineffectual attempts having been made to penetrate the obstruction in the usual manner by bougies and sounds of various sizes, I had recourse to the following operation:—The patient having been placed in the same position as in lithotomy, a staff was introduced into the urethra, and held by Mr. Hilles, who, with Mr. Baker, assisted me in the operation, with the extremity of it resting against the obstruction. I then made an incision in the perineum, extending backwards from the part in which the staff was to be felt, in the direction of the prostate gland. It was now evident that not less than three-quarters of an inch of the urethra was deficient below the pubes; the place of it being occupied by a rigid cicatrix. This having been divided longitudinally by the point of the scalpel, I was enabled, though not without some difficulty, to pass the staff from the part at which the extremity of it rested, into the sound portion of the urethra towards the bladder, and then

into the bladder itself. The staff was then withdrawn, and an elastic gum catheter having been substituted for it, the latter was allowed to remain in the urethra and bladder. On the ninth day after the operation, there being some degree of irritation at the neck of the bladder, the catheter was removed, being reintroduced, however, after two days more. From this time it was removed at intervals, which were sometimes longer, sometimes shorter, according to circumstances. The wound in the perineum gradually healed, and in less than ten weeks from the time of the operation was reduced to the diameter of a small pea. The patient was now able to introduce a silver catheter of the size of his urethra into the bladder without difficulty, and he repeated this operation so as to draw off his urine three or four times daily. When he voided his urine without the catheter, by placing the point of his finger on the opening in the perineum, he was enabled to discharge the whole in a sufficient stream by the urethra.\* 86.

While treating of chronic inflammation of the bladder, and speaking highly of the decoction of *pareira brava*, Sir Benjamin observes:—The infusion of *pareira brava*, which has been introduced into the last Pharmacopœia of the College of Physicians, does not at all answer the purpose of the decoction, and is nearly useless. The decoction is made thus:—Take half an ounce of the root of the *pareira brava*, add three pints of water, let it simmer gently, near the fire, until reduced to one pint. The patient is to drink from eight to twelve ounces of this decoction daily. If so large a quantity of liquid should be offensive to the patient's stomach, he may take the extract of *pareira brava* instead, twenty-five or thirty grains being equal to half a pint of the decoction.

*Incontinence of Urine.*—We find some remarks on this head which we may notice. After stating that incontinence may be the result of wound or sloughing of the neck of the bladder, or (which is most common) of an over-distended bladder, from stricture, or enlarged prostate, or paralysis, Sir Benjamin goes on to say:—"there are some cases of paralysis in which there is incontinence of urine although the bladder is empty, as if the same cause which rendered the lower limbs paralytic rendered the bladder incapable of distention. For example, a gentleman, sixty-three years of age, swallowed by mistake a bottle of liniment, of which the

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\* "The last report which I had of this patient was six months after the operation, and to this effect: 'that he had continued to improve, and expected in the course of a fortnight to be as well as ever.'

Since the manuscript of this Lecture was prepared for the press, a case very similar to that described above has come under my care, in the person of a young man nineteen years of age. He had received an injury of the perineum in leaping over a gate about a year ago. Three quarters of an inch of the urethra below the pubes seemed to be deficient. I made an artificial canal, joining the anterior and posterior portions of the urethra to each other, by perforating the cicatrix with the instrument having the concealed lancet, described at page 67, leaving an elastic gum catheter in the urethra and bladder afterwards. At this time, about ten weeks after the operation, the patient voids his urine by the urethra in a full stream, without pain or difficulty, no more than a few drops escaping by the opening in the perineum. A common plaster bougie may be introduced readily into the bladder. Mr. Guthrie saw this patient with me, and lent me his assistance at the operation."

tincture of cantharides was a principal ingredient. In about three quarters of an hour an emetic was administered; nevertheless he was immediately afterwards affected with paralysis of the lower extremities, and inability to void his urine. For the first fortnight he was under the necessity of having his urine drawn off at stated periods. After this he regained the power of making water, but was tormented by an incessant desire to do so. When I was consulted, four years after the commencement of the attack, he was able to walk with the assistance of crutches. At times he had a sudden and irresistible impulse to void his urine, and expelled a small quantity by a voluntary effort; but at other times it flowed involuntarily, without his being conscious of what happened, so that his clothes were as wet as possible. On introducing a catheter, I found that the bladder was empty. It may be supposed, that in this case something was to be attributed to the peculiar nature of the stimulus which had been swallowed. I have, however, observed the same thing in some cases of paralysis of the lower limbs, arising from other causes. I have occasionally seen what was called a case of incontinence of urine in young women having a disposition to hysteria: but from a close observation of such cases, I am led to believe, that the discharge of urine, although involuntary in appearance, is not involuntary in reality; and that this symptom, like many other hysterical symptoms, is to be referred to a mis-direction of the power of volition, and not to the actual want of it. The case which I am about to mention seems to confirm this view of the subject. A lady, twenty years of age, for the last ten or eleven years had been troubled with a constant discharge of urine. It flowed (as she said) without her being able to prevent it while she sat in her chair, and while she was walking; so that she was quite unfit to live in society, or even in her own family. All the plans of treatment, recommended by myself and others, proved inefficacious. At last, on account of this infirmity, it was thought advisable that she should be separated from the rest of her family, and she was sent to reside at a distance from them. After some time she was seized with an urgent desire to return home, and immediately she regained the power of retaining her urine. She continued well when I heard of her some time afterwards."

Sir Benjamin thinks the incontinence of urine of children involuntary in the first instance, but almost unconsciously voluntary ultimately. His mode of treatment does not seem very satisfactory to himself, or successful. It is as follows:—

"It is reasonable to suppose, that those children whose urine is of a too stimulating quality, in consequence of an excess of lithic acid in it, may be more liable to this kind of incontinence than others; yet I must say, that my endeavours to relieve it by the exhibition of alkalies and purgatives, combined with a regulated diet, have been generally unsuccessful. A blister applied over the *os sacrum*, and repeated according to circumstances, is a more effectual remedy. Sir Charles Bell has observed, that children are more liable to this troublesome symptom when they lie on their back than when they lie on the face or side. This may explain, in part at least, the good arising from the blister. The same object may be attained by making the child wear, during the night, a machine, so contrived as to prevent him lying in the supine posture. I do not know that you can absolutely rely on this method for the patient's cure, but it may often be employed advantageously, in

combination with other methods of treatment. In some cases, the discharge of urine is periodical, returning at the same hour of the night and morning. You may then direct the nurse to take the child out of bed, so as to give him the opportunity of making water about an hour before; or if the patient be older, he may be provided with a clock, having a loud alarm, for the purpose of awakening him from his sleep at the proper moment. Under the same circumstances the sulphate of quinine may be administered with great advantage. But in no instance are any of these remedies likely to be successful, unless the patient himself feels a strong desire to be relieved; and unfortunately this desire is too often wanting, long habit gradually reconciling the mind to this, as it does to many other inconveniences, until, at last, it seems to be a matter of indifference whether relief is obtained or not. I have heard of young persons being cured of this kind of incontinence of urine by applying caustic to the neck of the bladder, and by the introduction of bougies or catheters. If these methods of treatment produce any effect, I suspect that it is simply by annoying the patient and by giving him that strong desire to be relieved, which I have just mentioned as the first step towards recovery." 118.

After giving an account of inflammation of the prostate gland. Sir Benjamin observes, that he has seen a case in which the symptoms yielded to iodide of potassium. The case in question was as follows:—A gentleman, aged 31, complained of pains in the perineum, hypogastrium, and back of the pelvis, extending down the thighs. "He had a sense of obstruction in the rectum on the passage of the fæces. He was tormented by the desire to void his urine more frequently than is usual; but he had no difficulty in voiding it: he could empty his bladder by his own efforts, and the urine was transparent and healthy. The urethra was free from disease; but the prostate gland, when examined from the rectum, was found to be enlarged to two or three times its ordinary size." He traced the disease to a severe gonorrhœa ten years before—the disease had been severe for three or four years. Sir Benjamin prescribed two grains of the iodide of potassium thrice daily. This seemed to remove the complaint.

Our straitened limits will not suffer us to pursue the other subjects treated of in this able work seriatim. We must jump to the concluding lecture on LITHOTRITY.

Sir Benjamin gives a slight sketch of the modern history of lithotrixy, which establishes the fact that no man can be said to have wholly invented *and* applied the present lithotritic apparatus. On the contrary, like most other valuable discoveries it has been perfected only by successive and gradual steps.

Sir Benjamin alludes to Baron Heurteloup's application of the hammer. He doubts its superiority to the screw, and believes that "there is nothing that can be done by the hammer which may not be done quite as effectually by the screw, while the latter method is not liable to many serious objections which may be urged against the former."

Sir Benjamin gives a sketch of the instruments which he employs. It is Weiss's screw lithotriptor—its average length about eleven inches, exclusive of the handle. But he has one instrument, made for a particular occasion, thirteen inches long. It is well to have several instruments, of various sizes and shapes.

"For calculi of a small size the construction (except as to the addition of the screw) need scarcely differ from that of the common urethra-forceps which I described formerly; but for larger ones the opposite blades of the forceps should

be furnished with projections or teeth; and for those of a still larger size you will find it convenient to be provided with a forceps, in the fixed blade of which there is a longitudinal slit, while there is a corresponding wedge-like projection, fitted to enter the slit, in the opposite surface of the moveable blade." 359.

Through the slit, fragments drop into the bladder, so that a large stone may be crushed. The diameter of the instrument must vary with that of the calculus and of the urethra. It should usually be as large as the canal will admit. It should be cylindrical except in the handle. But it is well to be provided with one, the blades of which beyond the curvature are somewhat flattened, and in proportion broader than elsewhere. It is useful for seizing and crushing the smaller fragments.

So much for the instruments. Sir Benjamin next speaks of the measures preparatory for an operation.

The forceps should never be used in a bladder which will not retain at least six ounces of water. If the organ be irritable, the patient must be placed in the recumbent posture and the catheter introduced every, or every other day, with the view of injecting some ounces of tepid water. In this way the bladder will gradually become educated to containing liquid. If chronic inflammation exists with a deposit of adhesive mucous, the remedies for that state must be adopted. An abundant formation of this mucous forms a great objection to the operation--because it indicates an unfavourable condition of the bladder, and because the fragments are apt to be entangled in it. But where there is only little mucous, this may altogether disappear after the first crushing of the calculus.

The urethra should be dilated so as to admit an instrument of sufficient size and strength. If contraction within or behind the glans cannot be easily stretched, it must be divided with a bistoury.

There is a tumid condition of the prostate, impeding the introduction of the instrument, and rendering the part very liable to bleed. It subsides after a few days of constant repose in the recumbent posture. Sir Benjamin has "observed this state of things to exist especially after travelling in a carriage; and it forms one of many reasons, where the patient has come from a distance, for not recommending the operation to be had recourse to until he has had ample time to recover from the fatigues of his journey."

Let us pass to the operation.

The patient should be on his back on a sofa, or on the edge of the bed, with a thick cushion under the pelvis, to elevate the neck of the bladder. A silver catheter is then introduced, and as much tepid water as can easily be borne is injected.

"The catheter used for this purpose, should be provided with a stopcock, and the extremity of it should not be prolonged a great deal beyond the curvature. It may then be used, not only as a catheter, but also as a sound, for the purpose of exploring the bladder, and ascertaining in what part of the bladder the calculus is, at that time, lodged. This knowledge is always useful, but it is by no means indispensable; and I have often been able to seize a small stone with the forceps which I had not been able to detect by other methods previously. The injection of the bladder having been completed the catheter is to be withdrawn and the lithotomy-forceps is to be introduced in its place. In consequence of the peculiar shape of the latter this is less easily accomplished than the introduction of the catheter. The mere depression of the handle is not always sufficient to make it enter the bladder; and it is often necessary at the



same time to apply a moderate but steady force during the time that the curved part of the instrument is passing through the neck of the bladder. This is especially the case where the prostate gland is in any degree enlarged. You will know when the instrument has fairly entered the bladder by the facility with which you can move it in any direction, and by your being able to open the bladder to any extent without giving the patient pain. You may then explore the bladder with the forceps, and endeavour to ascertain the exact situation of the calculus in it. If it be lying on one side, by opening the blades, and then gently and cautiously turning them towards it, you will probably be enabled to seize it. If you do not succeed by this method, by the following you will rarely fail.

Raise the handle of the forceps so as to bring the convexity of the fixed blade in contact with the posterior part of the bladder; then open the moveable blade, at the same time making a moderate pressure downwards in such a manner as to depress the bladder towards the rectum. The instrument being then gently shaken by a lateral motion of the hand, the calculus, in whatever part of the bladder it may be situated, will roll between the blades and will be seized by closing them. Having been thus carefully secured, by turning the screw it is broken into fragments. The whole of this is a very simple process, requiring but little practice to make you a perfect master of it. When the calculus has been once broken, the fragments are to be seized and crushed in the same manner. They will fall one after another into the grasp of the forceps; and there is no limit to the number that may be crushed at one time, except what is afforded by the diameter of the urethra. Every fragment that is crushed adds to the accumulation of calculus matter; and if the accumulation be very large, it becomes difficult, or impossible, to withdraw the instrument without injury to the membrane of that canal. The marks on the handle of the instrument inform you of the exact extent to which the blades are separated; and you must use your own discretion, founded on your knowledge of the size of the urethra, as to the point at which you should stop. The forceps first used being then withdrawn, you may use a second, and even a third in the same manner, and thus you may not only crush a great number of fragments at one operation, but you may remove from the bladder a great deal of what has been crushed." 365.

The forceps should be withdrawn very slowly and gently. When as much as is prudent has been done, the catheter should be re-introduced, and the bladder emptied.

"Another syringe-full of water may then be injected, which the patient may be left to void by his own efforts, or which may be drawn off by means of a large catheter with two apertures near the extremity of sufficient size to allow some of the smaller fragments to escape through them." 366.

Sir Benjamin thinks it very unsafe to allow a patient to walk after the operation. He should remain on his bed or sofa. Whenever there has been rough usage of the urethra, at all events, an opiate should be given after the operation, and the bowels should be attended to.

The patient should be watched lest a fragment stick in the urethra, and occasion retention. But this is unlikely if the patient reposes, and the fragments seldom find their way into the urethra for the first day or two. After this they begin to pass away with the urine, and the patient should collect them.

If in the operation the stone is of large size, the forceps with the slit in one blade and wedge in the other, should be made use of. Scarcely any calculus will resist this.

A small calculus may be got rid of by a single operation. A larger one requires several. It should not be repeated until the patient has recovered

from the effects of the preceding one, nor should it be delayed long afterwards.

Of course, it is of the first importance to get rid of every fragment. The bladder should be explored with sound *and* forceps, at least twice after the cure seems complete. With this precaution, when the patient can empty the bladder by his own efforts, the chance of a fragment remaining is very slight.

"But it is quite otherwise in those cases in which the patient, in consequence of an enlargement of the prostate gland, is unable to empty the bladder by his own efforts. Hence only a small portion of the crushed calculus will come away in the stream of urine and you must be satisfied with washing out the remainder of it through the catheter by repeated injections of tepid water. Mr. Weiss has invented a forceps which, when the blades are opened in the bladder, answers at the same time the purpose of a catheter, and this is often very useful; still on ordinary occasions you will find nothing to answer the purpose better than a silver catheter of as large a size as the urethra, with two very large apertures near the closed extremity, not placed laterally, as in ordinary catheters, but one on the anterior or concave and the other on the posterior or convex surface. It may indeed be said, that, in the cases now referred to, this kind of operation ought not to be recommended. But it will sometimes happen, that although the patient may have had no difficulty of emptying the bladder before the operation, the prostate may be rendered tumid in consequence of its being irritated by the repeated introduction of instruments, so that he is unable to empty the bladder afterwards. Besides although this state of things adds to the difficulty of the operation, it is not in itself sufficient to prevent it being brought to a successful termination. and in cases in which there is good reason to believe that the calculus is of a small size, it forms no objection to it." 369.

Sir Benjamin next adverts to the inconveniences or dangers of lithotrixy.

1. Hæmorrhage. This may arise from the forcible passage of the lithotrixy forceps through the neck of the bladder. Sir Benjamin has known it discolour the urine for two or three days. But it has never interfered with the operation.

2. Rigors may follow lithotrixy. The rigor is usually produced by the stretching of the urethra by the withdrawal of the forceps; or it may be occasioned by a fragment of calculus sticking in the urethra. A dose of opium may prevent the rigor altogether, or defer it till next day. Rigors do not appear to interfere materially with the patient's recovery.

3. Sir Benjamin refers to two cases in which fragments of calculus impacted in the urethra gave rise to urinous abscess in the perineum. One patient died in two months with symptoms of diseased kidney. The other patient got well.

4. Sometimes the patient suffers from pain of the whole canal of the urethra, from the simultaneous escape of many fragments. Sometimes he labours under great irritation of the bladder, apparently from a fragment lodged near its neck. He may have complete retention, but Sir Benjamin has never seen it last for any time.

The patient should partake plentifully of diluting drinks. If fragments lodge, a middle-sized catheter may be introduced into the bladder, when they may either be dislodged and come away, or be pushed back and afterwards crushed. Sir Benjamin has removed fragments from the anterior part of the urethra by long slender forceps. It *might* be necessary to make an incision in the penis or the perineum. Sir Benjamin, however,

believes that if perfect repose is enjoined after the operation, the passage of fragments will seldom occasion serious inconvenience.

5. Inflammation of the mucous membrane of the bladder may occur. It generally subsides spontaneously in two or three days or continues till a fragment is either discharged from the urethra or pushed back into the bladder by the catheter. In one instance Sir Benjamin saw this inflammation prove fatal. The stone had been large—perhaps the patient had not been kept quiet.

On the whole Sir Benjamin is of opinion that lithotritry has great advantages over lithotomy. He touches on the cases to which it is not applicable.

1. In boys under the age of puberty, lithotomy is too successful to be abandoned. The urethra is not wide enough to be favourable for lithotritry.

2. Lithotomy is attended with little danger in the female while her short and wide urethra admits too readily of the escape of the injected water by the side of the lithotritry forceps.

3. Large stones are not well adapted for lithotomy, but they are still worse adapted for lithotritry. Sir Benjamin inquires whether it would not be well to crush first and cut afterwards.

4. Lithotritry is not well adapted for cases of enlargement of the prostate gland, where the patient cannot empty the bladder, unless the calculus is small; then the fragments may be washed out of the bladder through a large catheter. When the tumour of the prostate projects into the bladder, it is difficult to elevate the handle of the instrument sufficiently to seize the stone readily.

5. Lithotomy is very fatal where the kidney is diseased, principally, Sir B. Brodie supposes, from the loss of blood that it entails. Crushing he thinks *safer*. But any shock to the system must be hazardous, and it must, usually, be more advisable to palliate.

After a case, Sir Benjamin sums up what he has to say in favour of lithotritry in these words:—

“With the exception of such cases as those which have been enumerated, there are few to which this method of treatment may not be advantageously applied. It may be said that the exceptions are numerous; but they are the result chiefly of delay. If a patient seeks the assistance of a competent surgeon within six or even twelve months after a calculus has descended from the kidney into the bladder, the urine having remained acid, it will rarely happen that he may not obtain a cure by a single operation, and with so small an amount of danger that it need scarcely enter into his calculations. As time advances, the facility with which he can be relieved diminishes, and after the lapse of two or three years, especially if the urine has become alkaline, it is probable that the calculus will have attained such a size as to render the old operation preferable, and that the access of disease in the bladder or kidneys may render any operation hazardous. It would be absurd to say and it would be unreasonable of human-kind to expect, that an operation which has for its object to relieve them of a disease so terrible as that of a stone in the bladder, can be always free from inconvenience, and difficulty and danger. Nevertheless, from what experience I have had, I am satisfied that the operation of lithotritry, if had recourse to only in proper cases, is not only much more successful than that of lithotomy, but that it is liable to fewer objections than almost any other of the principal operations of surgery.”

It must be owned that this is a favourable picture of lithotrity. The lights that characterise it contrast strongly with the sombre colours in which the operation has been drawn by Velpeau. To what is this due? May it not be owing to the careful selection of appropriate cases by the English surgeon—to the judicious management of patients during and after the operation? The candour of Sir Benjamin Brodie is sufficient guarantee for the fidelity of his statements—his judgment and experience, for the soundness of his inferences. If he speaks so well of lithotrity, it must be a valuable addition to surgery.

We cannot dismiss these Lectures without again recommending them to our readers. They bear the impress of an exact and philosophic mind, and are a model of that sober and healthy observation so eminently characteristic of a practical man. We find in them none of the extravagant views, the splitting of hairs and ridiculous refinements, the overdone erudition or the superficial flippancy which constitute the faults of our present medical literature. And last, not least, the doctrines are those of a *British surgeon*, stamped with the national features of straight-forwardness and common sense.

THE CYCLOPÆDIA OF PRACTICAL SURGERY, &c. &c. Edited by *William B. Costello, M.D.*, Member of several Learned Societies, National and Foreign. Part XI. London: Sherwood and Co. 1842.

THE subjects treated in the Part of the Cyclopædia before us are *Fistula and Fracture*—the former by Dr. Costello, the latter by Dr. Macdonnell, of the Richmond Hospital, Dublin. Both articles are very creditable to their authors. That on fracture deserves particular notice, from the interest and value given to details which might almost have been predicted to be stale and uninteresting.

The article is introduced with some general considerations on Fracture which we need not go into. Dr. Macdonnell properly divides the efficient causes of fracture into external and internal. The only efficient internal cause is muscular action. The frequency of fracture of the patella in this way is familiar. But Dr. Macdonnell relates that "spasms, epilepsy throwing a stone, and sudden effort to regain the equilibrium of the body, are recorded as having induced fractures of the thigh-bone, the tibia, or the humerus. A furious maniac, confined in a chair at Charenton, threw his head violently forwards and produced separation between the fifth and sixth cervical vertebræ, with fracture and died in thirty-six hours." Such extreme instances as the above are happily rare, and not familiar, we dare say, to our readers.

External efficient causes act either directly or indirectly in producing fracture. But sometimes an external cause co-operates with an internal one, the latter acting passively. Thus, in the ankle-joint, the external violence not uncommonly acts through the ligaments which, not yielding, tear off the malleoli.

"A very singular case of this nature occurred in the Richmond hospital under the care of Dr. Hutton, three or four years ago. A young man, of about twenty-five years of age, was thrown to the ground with great violence, in wrestling. On rising he found himself unable to walk from pain in the knee. The joint and limb, for some distance above and below, quickly swelled, and became excessively painful." 242.

Fever set in and the patient died in three weeks with secondary pleuropneumonia.

"The joint was found full of pus, with flakes of lymph; the synovial membrane was of a bright scarlet; and a portion of the spine and articulating surfaces of the tibia, nearly as large as a crown-piece, was found torn from the head of the bone, and adhering to the anterior crucial ligament. The preparation is in the Museum of the Richmond hospital." 242.

Dr. Macdonnell estimates the *relative frequency of fractures of different bones*. He gives a table from the Pennsylvania Hospital according to which the following would seem to be the order of frequency of the more common fractures:—Leg, Upper extremity, Thigh, Clavicle, Ribs, Skull, Jaws, Patela, Foot, Scapula, Fingers, and Spine.

Possibly the number of fractures of the skull may be underrated—and that of fractures of the scapula overrated. For Dr. Macdonnell justly observes that we hear surgeons talk a good deal of fracture of the neck of the scapula, but we see no authentic dissections of it.

There is a table of two hundred and twenty cases of fracture admitted in one year into Guy's Hospital. The Table is as follows:—

FRACTURES OF THE	Nos.	Reported, open, or compound.
Femur . . . . .	48	
Tibia and fibula . . . . .	36	
Tibia . . . . .	13	
Fibula . . . . .	13	
Leg . . . . .	4 . 66	. . . . . 10
Humerus . . . . .	30	. . . . . 2
Fingers . . . . .	18	. . . . . 18
Ribs . . . . .	11	emphysema. 4
Patella . . . . .	8	
Radius . . . . .	4	
Ulna . . . . .	1	
Olecranon . . . . .	2	
Radius and Ulna . . . . .	4 . 11	. . . . . 1
Clavicle . . . . .	5	
Skull . . . . .	4	
Ossa Nasi. . . . .	3	. . . . . 37
Lower Jaw . . . . .	3	. . . . . 37
	1	
Great Toe . . . . . 2	4	. . . . . 3
Astragalus . . . . . 1		
Spine . . . . . 1		
Of bones, not mentioned, of difficult diagnosis, as about great joints, &c. }	8	. . . . . 1
	220	

We have some good remarks on the *displacements* of the portions of fractured bones, which are considered under the head of longitudinal, lateral, rotatory, and angular. Then we have remarks on transverse, oblique, longitudinal, and impacted fractures. Dr. Macdonnell shows that the scepticism expressed by some surgeons with regard to longitudinal fractures of long bones is groundless, there being well-authenticated cases of it, as a consequence of gun-shot wounds.

Dr. Macdonnell alludes to a species of fracture common in early life, in which the bone is bent and broken on one side, but not through. There is angular deformity, more or less, without crepitus or mobility of the bone. He proposes the term "flexed or bent bone," to express it.

"Chaussier and others have recorded many cases of fracture occurring during intra-uterine life. They are usually the consequence of some external violence to which the mother has been exposed before the birth of the child, or of force used at the birth; injudiciously, or of necessity, in effecting delivery by art. Chaussier has met, in the same fœtus, with a great number of fractures, which could not be attributed to violence, and to which he has therefore given the name of spontaneous fractures." 247.

Simple and complicated fractures are next touched on. "Compound" fracture is a term which finds no favour in Dr. Macdonnell's eyes. He deliberately excludes it, by reason of its vagueness, and employs in its stead the designation—"open or exposed fracture." So that we know what it means, we suppose that it does not greatly matter what term we employ. Though, critically speaking, there may be objections to the name of compound fracture, still it is so familiar to the English ear that we doubt its being speedily abandoned.

When speaking of the diagnosis of fracture, Dr. Macdonnell very properly reprehends the practice, too frequently resorted to, of pulling a limb about to *satisfy* the surgeon of the existence of a fracture. Every painful examination is more or less injurious, and unless something decided is to be done in case of a fracture being proved, the best plan is to be careful, and gentle, in our manipulations, and trust to the subsidence of inflammatory swelling clearing up the difficulty.

Dr. Macdonnell makes some good observations on the mode of examining and the signs of fractures, more especially on *crepitus*. He adverts more particularly to the possibility of confounding with true crepitus, the not dissimilar sound originating in the synovial sheaths.

"The crepitus which I may style delusive, is caused by the motion of tendons in their sheaths, and of muscles where they move on one another or neighbouring parts by favour of synovial bursæ; when, the lining membrane of the sheaths or bursæ being affected with chronic inflammation, its secretion is so altered that the tendons or muscles no longer glide smoothly, but fret as they move. This crepitus is not of unfrequent occurrence in cases of supposed fracture. It has been compared to the sensation conveyed by pressing arrow-root in powder, or by the fretting of two surfaces of wax drawn lightly along one another. The crepitus of fracture, on the other hand, is grating, harsh, and dry. The synovial crepitus occurs most frequently in the forearm." 251.

All practical surgeons are, of course, familiar with this pseudo-crepitus. But it is not always so easy to distinguish it from true crepitus as might be

imagined. This is the case more particularly about the shoulder-joint; for deep-seated crepitus has not that clear, sharp and decisive sound that crepitus near to the surface has. Where any difficulty of this sort exists, all the circumstances of the case must be taken into consideration, and the diagnosis founded on a comparison of them.

Dr. Macdonnell speaks slightly of the application of the stethoscope to fractures. In the majority of instances, we think, with him, that we can do better without it. But it may be useful for all that. We have seen it so in cases of fractured rib, and the crepitus has been distinguished by the stethoscope when it could not be so by the hand.

We have a good account of the *Reproduction of Bone* illustrated by several woodcuts, and containing what is known upon the subject. Perhaps this abridgement of an abridgement presents the reader with the pith of the matter :—

“Immediately that a fracture takes place, a quantity of blood, greater or less according to the degree of violence inflicted on the soft parts, is effused between the fragments, under the periosteum, and into the cellular tissue immediately surrounding the bone at the fracture; and, in cases of severe injury, extensively into the tissue separating the muscles, or their fasciculi. Hunter supposed the effused blood to perform an important part in the repair of fracture; by coagulating, becoming organized, and forming the basis of callus. The effusion of blood, however, is merely the mechanical consequence of the rupture of the blood-vessels, and is so far from being a necessary element in the process of repair, that those cases recover most favourably and easily in which the effusion of blood is least, because in them the least violence has been done to the soft parts, and the fragments of the bone retain most nearly their natural relations with regard to one another; and further, the first duty nature imposes upon herself is, to bring about the absorption of the effused blood; which, after a time, wastes and assumes the ochre-colour of apoplexies, and then grows pale and disappears. The secretion of fresh organizable lymph,—the result of the inflammation supervening upon the accident,—forms the first step of a long process of repair, which, in a large bone of an adult human subject, extends over a period of from eight to twelve months. A tumour, largest at the seat of the fracture and gradually diminishing in size above and below this point, soon becomes defined. At first, it consists of the organized lymph, which being gradually removed by absorption, the nutritive vessels of the part deposit in its stead a substance resembling fibro-cartilage, for which cartilage, by degrees, is substituted in the same manner. By-and-by, portions of the cartilage being absorbed, particles of bone secreted by the nutrient capillaries take its place, and in process of time the whole tumour becomes osseous, the ossification proceeding from within outwards. Finally, the new bone acquires greater density and strength than the original shaft, insomuch that, in the event of another fracture of the same bone, it will not be broken at the same point as before. The tumour at the fracture, thus different in its constitution at various periods of its age, is technically called the *callus*.” 253.

We observe that a dissection in the Museum of the College of Surgeons of Dublin, hardly bears out Dupuytren's views of the distinctness between the “provisional” and the “permanent callus.” We are inclined to believe, from experiments and dissections of our own, that this distinction is pushed too far, and that it cannot always be verified by an appeal to nature. It is not a very uncommon circumstance, if we may trust our own observations, for the medullary cavity at the seat of injury to be very perfectly restored.

Most persons are aware, that in a perfectly consolidated fracture the callus is ultimately stronger than the original bone. The following analyses appear to determine the matter. One analysis was made by Dr Davy, one hundred and twenty-eight days after the injury. The shaft and the callus are compared.

	Shaft.	Callus.
Animal matter - - - -	38.60	38.8
Phosphate lime, &c. - - -	61.40	61.2
	<hr/> 100.00	<hr/> 100.0

Another analysis, at a later period, (not specified,) is quoted from M. Henry Gauthier de Claubry. It shows the final supersaturation of the callus with calcareous matter.

	Original Bone.	Callus.
Animal matter - - - -	56.284	43.795
Carbonate of lime - - -	3.846	9.785
Phosphate of lime - - -	38.075	44.894
Phosphate of Magnesia - -	1.012	1.526

This decadence of the animal matter in the new bone, as it reaches to its permanent state, is analogous with what we see in other tissues. Cicatrices of skin, &c. are well known to have a lower degree of vitality than the original parts.

An Appendix to the account of the Reparation of Bone is furnished by Mr. Wilkinson King. It is to be regretted that this gentleman does not write in a more concise and simple style. His views would be quite as striking and more intelligible. So far as we can see they amount to this—that bone is most easily and naturally formed upon bone, a postulate which, we fancy, will be easily granted—that the periosteum being excited, if you will, inflamed, is the principal agent in the process of deposition, which cannot well be denied—that the quantity of callus is in some degree proportionate to the amount of irritation, and is, therefore greater in an animal who hops about on three legs and disturbs his broken one, than in man who is put to bed with splints upon him—that the solid plug described as descending into the medullary cavity of bones is more talked about than seen, a sentiment with which we agree—that spicula of bone in the midst of callus are in the same problematical category.\* After a good many observations, Mr. King sums up:—

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\* The following passage will exhibit both the view and the style of Mr. King:—

“Every museum contains the alleged proofs of these facts; but I may safely ask, where is the collection, in which we may find a series of specimens to establish the spontaneous and independent commencement of bony callus,—the successive stages of irregular or accidental callus? The formation of all bones, by initiative points of ossification, follows peculiar laws; and it is not impossible that the same laws are to be seen in operation in other instances; but the ordinary rule of repairing fracture is parallel to the growth and not to the commencement of bone; it is *bone upon bone*, wherever increased nutrition or inflammation is excited.”



"For a brief review of this appended chapter I may repeat, 1st, That the periosteum, whether original, or derived from granulation, adhesion, or cicatrization, is the chief source of the reparation, as of the nutrition of bone, and that the original membrane is only in degree more efficient than the adventitious: 2ndly, That, whatever nidus may precede, the ossification goes on beneath periosteum—bone upon bone—till the fragments are cemented by the union of two portions of new bone: 3rdly, The causes of ossification are inflammation, the presence of bone and the existence of the necessary material in the blood: 4thly, Remodelling absorption finally comes into operation, and its cause is that of the declining nutrition, disease, &c." 273.

Dr. Macdonnell passes to the *Treatment of Fractures*. His remarks and directions with reference to the transport of a person with a broken limb to his home or to the spot where the fracture can be properly reduced and put up, are deserving of every young surgeon's study. We shall give a sketch of them.

Unfortunately, in most instances, the patient is carried by ignorant persons, and the limb is rudely jolted, perhaps materially injured. But, suppose that a stage-coach passenger, or a gentleman, while hunting, has met with a fracture of the thigh. The fracture being ascertained, the surgeon, with three or four assistants, cuts off the boot and rips up the trousers in the outer seam. He then commits the sound limb to one assistant, the other leg to another, while, himself grasping the thigh above and below the fracture, steadies it during the transport. If a third assistant is strong, and the patient not heavy, the trunk may be given to his sole charge. "Let him direct this assistant, turning his face towards the feet of the patient, and having his right arm next him, to take hold of the patient's chest immediately below the axillæ, if possible clasping his hands under the spine, while the patient, with or without the aid of a handkerchief passed over the opposite shoulder of the assistant, helps to support his own body by clinging round the neck of the assistant. I think it of some importance to make these arrangements with a view to carry the patient feet foremost, that he may see the way he is going. He will thus, in the state of nervous alarm in which he is, be less liable to involuntary muscular efforts, which are always productive of mischief, as, not being anticipated by the surgeon, he cannot be prepared to counteract them." The patient now, directed to be perfectly passive, is carried to the nearest house and placed upon a bed.

The surgeon has now to provide temporary substitutes for splints and rollers, and Dr. Macdonnell's are particularly ingenious.

"Let him provide himself with ten or twelve willow, hazel, or other straight rods, about as thick as the little finger, and long enough to run from the great trochanter to the foot. Let each of these be bedded neatly in a small quantity of unbroken straw, and bound with twine. Three of these bound to one another side by side, in three or four places, will form an extempore splint of the length of the limb, and capable of adapting itself to its form. Three or four splints of this kind may be constructed. Cushions for these are next to be made of old linen, or any other soft materials the surgeon can lay his hands on. If tow is to be had, it will be of great use in filling up vacant spaces; if not, any soft material that can be got, must be substituted. A many-tailed bandage is now to be placed on the splint intended for the back of the limb, and a long single headed roller, or tape, or cord, is to be prepared, to fix the splints when applied.

Dr. Macdonnell selects, we think very properly, the straight position. It must be evident that it is much more secure, and convenient in all respects, than the flexed.

"Next, while the surgeon preserves the reduction with his own hands, he and one assistant raise the whole limb, so as to permit a second to slip the splint, covered with its cushion and the many-tailed bandage, fairly underneath it. The limb is then to be let gently down on the splint, an assistant supporting it, while the surgeon applies the pieces of the many-tailed bandage under the splint; five or six strong tapes or cords should be laid across at regular intervals, for the purpose of binding the splints on the limb when these have been placed in their proper situations. Let a second splint be laid on the inside of the limb protected by the substitute for a cushion, and a third along the outer and anterior part in the same manner. Perhaps a fourth may be required along the front, when the limb is large. The outer splint should extend from the top of the great trochanter to the point of the external malleolus—the inner from near the fold between the thigh and perineum to the point of the internal malleolus—none of them should descend so low as the sole of the foot, lest they should be liable to catch upon any thing, and by so doing rudely shake the limb. Before binding the strings round the splints, the vacancies between them and the limb, as at the ham, &c. should be filled up, and the prominences of the bones should be protected from undue pressure with tow or any other soft material. Let the tapes be tied firmly, three for the thigh, and two for the leg. Lastly, the single-headed roller is to be applied over all, with a moderate degree of tightness, from the toes to the top of the limb." 275.

The patient is now in a state to be conveyed with tolerable safety, home. He may be transported in a coach, with the limb on the two seats, or on an Irish jaunting-car, &c. But, if the fracture is a very bad one, a litter must be manufactured and hand carriage is requisite. Dr. Macdonnell's recipe for a litter *pro re nata* is as good as his other prescriptions in this way.

"A door, or any similarly shaped board will answer, with two poles securely nailed across and underneath it, one a little below the top and the other a little above the bottom of the door; or the poles may, in the same way, be secured along each side of the board. In this way two men can carry the litter like a sedan chair, whereas four would be necessary according to the former plan. In either case the poles should extend two or three feet beyond the board, that it may not strike against those who carry it. If nothing of this kind is to be had, a litter may be constructed in the following manner. Let four poles, two, seven or eight, and two, ten, or twelve feet long, be procured, if not in the house, from the next wood. Let the upper and lower edges of two strong sheets be sewed well together with pack-thread and let the two longer poles be then passed through them, and separated, till the sheets, the side of one of which is to be in contact with that of the other, are tensely stretched by the poles. Let them be fixed in that position, by passing the shorter poles under them, immediately above and below the sheets, and nailing or tying them all firmly together at the four points where they cross each other. Lastly, cutting one or other pair of poles near to the sheets, we have a litter requiring two or four men to carry it, according as we cut short the poles. Either may be necessary, according to the weight of the patient. The two-porter litter is always to be preferred where there is a choice. It can be carried through doorways, and the smaller the number of persons employed at the same time in the transport, the less is the risk of want of concert in their movements. A thin hair mattress, or one or two blankets, and a bolster, being laid on a litter, it is now fit to receive the patient." 275.

The surgeon should superintend the removal of the patient—the bearers should keep step like chairmen—and a couple of pillows hollowed in the middle may be placed across under the limb, to give it a lateral support.

With regard to the bed, a narrow one with a low foot-board is the best, though we must take what we can get—and a hair mattress is the proper thing to lie upon.

The observations on the reduction and coaptation of a fracture are judicious. Dr. Macdonnell properly reprobates violence or excessive force in the extension of the limb. When there is much muscular resistance it is better to wait for the effects of time and soothing measures, but in the great majority of cases, the sooner reduction is effected the better. It is very absurd to wait for two or three days, as some people do, when the tonic contraction of the muscles and the coagulation of the blood and lymph have helped to fix the broken portions in a contracted and improper position. More pain and more force in the reduction are the results.

We have full details respecting splints, bandages, cushions and so forth. We observe that Dr. Macdonnell speaks of paste-board splints in the management of fractures in children, but does not seem to be aware that undressed leather has been applied to the same purpose, and is in many respects far preferable.

On one point Dr. Macdonnell insists, and he cannot insist too strongly—not applying the bandages too tightly. Simple as this rule may appear, how often is it infringed in practice! The temptation to put the fracture up *securely* is very great, and great mischief as well as little is constantly inflicted. Dr. Macdonnell relates a striking case, in which a poor boy separated the inferior epiphysis of the radius from its shaft. A medical man put up the limb so tightly as to occasion a good deal of pain. The splints were not loosened and gangrene of the limb supervened. The lad was in imminent danger for some days, but ultimately a line of separation formed a little below the elbow-joint, the bones were sawed through, and the patient recovered. We fear that instances might be found to match this, or worse.

Dr. Macdonnell enumerates the ordinary methods of treating fractures, by extension of the limb in the straight position—by the bent position,—by the starched bandage or paste-board splints—and by suspension of the limb. He remarks, properly enough, that no one can be employed to the absolute exclusion of the rest, but he prefers the bent position. We must confess that in fractures of the femur in its lower two-thirds, and in fractures of the leg, but more particularly in the former, we like the straight position best.

The starched bandage Dr. Macdonnell thinks (and we are of the same opinion) will not maintain its hold upon the Continent: it has never got one here. He himself has known several instances in which much mischief—high inflammation, abscesses, gangrene ensued from its, perhaps injudicious and improper, employment.

Here, we believe that we must stop. The article is incomplete in the Part of the Cyclopedia before us, and remains to be taken up in the next. When that appears we shall resume our notice of what is really a valuable contribution to surgery.

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LA CLINIQUE DES HOPITAUX DES ENFANS, ETC. No. 10,  
January, 1842.

In this number of the Clinique, the Editor has given an analysis of some excellent practical treatises on *tuberculous degeneration*, as it occurs in children. The first of these is from the pen of Dr. Cheneau, under the following title, "may we not determine, at least to a certain extent, the causes of the predilection of tubercles for the lungs from the age of 15 to 40?"

During infancy and up to puberty, according to Dr. Cheneau, nature is anxious only about the preservation and growth of the individual. The life of this being, which is then altogether material, is concentrated in the organs of reparation and assimilation; the functional derangements of these organs must then favour still more the circumstances which preside over tubercular deposition, and accordingly tubercles are then more frequent in the mesenteric and intestinal glands. In support of this theory Dr. Cheneau states, that mesenteric and intestinal phthisis are more frequent than others, before puberty; this assertion, however, would require some proofs, more especially as it is obviously intended to serve as the basis of a theory. Until these proofs be adduced, we must withhold our concurrence; nay our own experience satisfies us of the falsity of the assertion, as we have reason to know that tubercles of the bronchial and pulmonary glands are more frequent than of the mesenteric and intestinal glands. Thus, "the abdomen being at this period of life the chief centre towards which Nature directs her efforts." Dr. Cheneau's theory explains, no doubt, the great frequency of abdominal tubercles at this age, but not their greater frequency than that of tubercles in other regions. The activity of organs is generally considered as the most powerful source of their predisposition with respect to tuberculization, so that the organ most active is the most liable to be affected by its own activity. In this way the greater frequency of tubercles in the brain in the first years of existence is accounted for. M. Cheneau however denies the greater frequency of tubercles in the brain in infants, and explains this fact by the inactivity of the brain before puberty, the period at which the intellectual faculties first begin to be brought into play. And yet according to our author, it is not the brain that will be the victim of its own activity, but the lung, on which organ the over-excitement produced in the brain by intellectual exertion and the various passions of the mind will be thrown through the medium of the pneumogastric nerve. Thus then, M. Cheneau, after having admitted in early age, the direct influence of the assimilating organs on themselves in producing tuberculization in the centre of their own activity, no longer admits it when the brain is in question, and yet, in order that his theory may be consistent, it is necessary that the cerebral excitability should produce on the brain itself and not upon the lung, that which the irritability of the digestive organs produces on these organs and not any other. "Life in infancy being," says M. Cheneau, "entirely material and limited to the abdominal functions, we may easily conceive that the disturbances of the nervous influx should be directed in preference to the organs contained in this cavity, and that the formation of tubercles should be more

frequent there, whilst, once puberty is completed, and the brain now performs functions in which it participated heretofore but in a very slight degree, the continual disturbances thence resulting, must in their turn, modify the organs with which it holds *direct relations*, and thus pulmonary tuberculization must take place in the lungs in preference to any other organ." To this, however, it may be objected that it is the brain itself which ought to become modified; for there is no organ to which it is more *directly* related than to itself, and the disturbances of nervous influx should pass in preference to the brain, in the same manner as they do to the organs which are the seat of the abdominal functions. Another objection that may be advanced to this theory is that the brain is more directly connected, by the pneumogastric nerve, to the stomach than to the lung, so that it is to the former organ that the nerve should convey the influence of cerebral excitability and produce morbid changes in it.

Before we close our notice of this article, we beg leave to remark that both the author and his critic seem to us to understand the principle which regulates the morbid predisposition of certain organs at different periods of life differently from other people. M. Cheneau has it that the greater the activity of any organ is at any period of life, the greater is its liability to tubercular disease at such period. We always thought that the principle was, that the more developed any organ is at any period of life compared with others, the greater is its liability to become the seat of disease. It is a fact which cannot be questioned, that young children are more liable to cerebral disease, than adults, and it is equally certain that the brain in them is more developed than any other organ of the body. The activity of the abdominal organs in discharging their several functions is entirely a different kind of thing from the activity of the brain in thinking—the difference is precisely the same as that between animal and organic life. We think that there is some misconception here with respect to the principle, which regulates morbid predisposition, and also an abuse of the term "activity."

The next essay on tuberculization is by Dr. Becquerel. An analysis of it is contained in No. 11, of the *Clinique*, February, 1842; it is entitled *Bronchial Ganglionic Phthisis in Children*. We shall present our readers with the most interesting points in this essay.

Tuberculous degenerescence of the lymphatic glands which surround the bifurcation of the trachea and bronchi is observed more frequently than pulmonary tuberculization. The tuberculous glands may be situated beneath or around the tracheal bifurcation, around the large bronchi, at the root of the lungs, or between these tubes.

*Anatomy.*—In the state of crudity there is hypertrophy of the glands. Either in the state of a grey semi-transparent substance, or, at a later period, in the state of crude tubercle, the glands present themselves distinct and separate, or several of them soldered together; they sometimes acquire the size of a pigeon's egg. When soldered together, they may form a mass which surrounds the large bronchi and the great vessels situate at the base of the neck.

*Destruction.*—Under the influence of enlarged glands, there may be

destruction of the bronchial parietes, or at all events compression without destruction of the parietes, and a diminution in the calibre of the bronchus.

*Compression.*—The pulmonary artery and pulmonary veins, the aorta and the venæ cavæ, after their exit from the pericardium and a little below the base of the heart, are sometimes compressed; the pulmonary artery and pulmonary veins more frequently, sometimes the aorta, and hence hypertrophy of the left ventricle of the heart. The venæ cavæ, superior and inferior, are sometimes compressed simultaneously, sometimes separately. Attention to this compression is solicited by M. Becquerel, because under certain circumstances, it accounts satisfactorily for certain hypertrophies which become developed in phthisical subjects.

Tuberculous and enlarged glands may project anteriorly, may become adherent and soldered as it were to the sternum and more especially to its upper part.

*Pus.*—In a paragraph which treats of softening of tuberculous bronchial glands, Dr. Becquerel cites the case of a child five years old, in whom he met five or six bronchial glands filled with good pus without any lumps. On making an incision into them, he says, we observed a cyst lined with a membrane injected so as to present the appearance of the branches of a tree, without any remnant of tubercles; and as there existed no tubercle nor gland either in the lungs or in any other organ, one might have admitted a non-tuberculous suppurative inflammation of the glands, if M. Becquerel had not found, by an attentive examination, three small bronchial glands presenting all the appearance of the grey induration, and two others transformed into crude tubercles.

Ganglionic tubercles sometimes undergo a modification of a suet, steatomatous appearance. This modification may be either indicative of commencing softening, or else of some change tending to a cure, or the transition to the cretaceous state; the latter state is very unusual in children.

*Cavities.*—Tuberculous matter once softened, must be discharged sooner or later. This mode of evacuation of these cavities takes place through the bronchi the parietes of which become ulcerated from without inwards, and give exit to the softened matter. The ganglionic cyst communicating with the tube constitutes a *false cavity*. When these false cavities replace inter-bronchial glands somewhat deep-seated, they are easily mistaken for true cavities.

These cysts, when they are multilocular, may go on to a certain depth, perforate the pulmonary pleura, and produce hydro-pneumothorax. They have been twice found to produce ulceration of the pulmonary artery, and to occasion perforation of the other blood-vessels, as also that of the œsophagus.

Cysts, formed by the membrane of the glands, which become cicatrised by adhesion of the parietes, constitute another mode of termination of ganglionic phthisis.

Tuberculization of the bronchial glands may exist alone and distinct, or it may coincide with a similar degenerescence in the mesenteric glands,

with tuberculous ulceration of the intestines, or with tubercles developed in other points of the system. Sometimes it is observed to coincide with tuberculous degenerescence of the lymphatic glands of the neck.

*Causes.*—The causes of this disease are but little known. In infancy the tuberculous affection may assume, according to M. Becquerel, four distinct forms :

1st. The different lymphatic glands of the neck, chest, and abdomen undergo tuberculous degenerescence, separately or simultaneously.

2. The tubercles are developed in the different parenchymatous structures : in the lungs, brain, liver, spleen, and kidneys.

3. They are developed simultaneously in most of the organs under the form of what are called miliary granulations.

They are more especially developed in the sub-serous tissue of the different cavities. They almost always occasion a chronic inflammation of the serous membranes with which they are in contact.

Ulcerations of the intestines may show themselves under all forms, either distinct, or combined.

The causes of tuberculization in children are the following : hereditary taint, being born of parents aged or unhealthy ; delicate, lymphatic constitution of parents ; bad nursing ; unwholesome, non-nutritious diet ; dwelling in a cold, moist, and ill-ventilated habitation ; harsh treatment ; exposure to cold by insufficient clothing ; masturbation ; convalescence from measles, scarlatina and typhoid fever ; any disease of long duration by weakening the system.

*Diagnosis.*—The author justly observes that the symptoms of tuberculization are so obscure, that it is extremely difficult to diagnose them. The new results which he gives belong to a considerably advanced stage of the disease.

Sometimes *pain in the region of the sternum*. On a line with the sternum there may be a feeling of dull pain, which patients generally refer to the stomach. It is sometimes observed in children, in acute or chronic bronchitis, and in the different forms of tuberculization.

*Cough.*—In all pulmonary affections.

*Dyspnœa.*—When tubercular and very much enlarged glands compress the trachea at its bifurcation or near the large bronchi, this is very intense. Considerable dyspnœa is characteristic of this affection, when it cannot be accounted for by the phenomena of auscultation, which if they are not entirely absent, indicate the existence of other affections which for their extent, would be far from being sufficient to account for the difficult respiration experienced by the patient.

*Expectoration.*—When there is enucleation of the degenerate gland, and this has made its exit through an opening in the bronchi, it may serve for a diagnosis.

*Percussion.*—This cannot be useful unless the diseased glands have penetrated to a certain depth of the lungs, or to the surface.

*Auscultation.*—Compression diminishing the calibre of a bronchus, which very rarely happens, the result may be a diminution in the intensity of the respiratory murmur in the part of the pulmonary tissue to which the bronchus is distributed.

We may admit as rational, the possibility of the following symptoms, though they may not have been observed: if a considerable number of tuberculous glands approach the surface of the organ, there will be a murmur of *prolonged expiration*; if these glands are converted into cysts communicating with the bronchi, there will be *gurgling*; if the pleura be perforated, there will be hydro-pneumo-thorax.

Sometimes *palpitations*, when the large vessels are compressed by large glands. This chiefly happens, when the latter compress the aorta.

Tolerably often dropsies, and more especially greater or less œdema of the lower extremities and of the trunk, when there is compression of the vena cava, and especially of the vena cava inferior. In phthisical children dropsies are somewhat frequent. When anasarca comes on at an advanced stage of the disease, we may be well-nigh certain that the serous infiltration is owing to a cachectic state of the system. At a less advanced period, we may fairly suppose that it is the consequence of compression of the venæ cavæ, more especially of the inferior, a circumstance which causes the infiltration of serum to occupy most frequently the trunk and lower extremities.

The examination of the urine may discover Bright's disease, which sometimes complicates tuberculization in children.

Tuberculization of the branchial glands, when it attains the stage of suppuration, may give rise to the following general symptoms: loss of strength, emaciation, hectic fever, especially in the evening and at night; sometimes diarrhœa, most frequently connected with intestinal ulceration. We may add the frequent symptoms of complication of tubercles, either of the lymphatic glands of the neck, or of the lung, or of the mesentery and peritoneum, &c.

All the symptoms now described may be completely absent; this happens at the first stage of the disease. They may be slight and but little marked; and without an attentive and minute examination they may escape the observer. They may be masked by the symptoms occasioned by other tubercular affections, as of the lung, for instance; a child presents at the apex of the two lungs softened tubercles and cavities; he coughs, becomes emaciated, has dyspnœa, &c., and auscultation detects at the same time the change produced in the lung; we will naturally attribute to this lesion all the share in the phenomena observed. If tuberculization takes place on the part of the cervical glands, we shall be deprived of some symptoms which are common: emaciation, hectic fever, and also dropsies, if tuberculization exists in the abdominal cavity; we are then no longer warranted in attributing these symptoms to bronchial tuberculization.

Mode of *termination* of the disease:—rarely a cure by a resolution of the tubercles which is supposed rather than proved: 2, an enucleation and discharge of the tubercles by cough: 3, conversion of the tubercles into cretaceous matter: 4, softening of the gland and its opening into the



bronchi, expulsion of the tuberculous matter and cicatrization of the cyst. This termination, which is possible, is not proved anatomically.

*Frequent Death*: 1st, by the progress of degenerescence: 2, by the development of an accidental and acute inflammatory complication, bronchitis, pneumonia resulting from the debilitating influence of this degenerescence, especially when it occasions suppurating cavities: 3, by the development of other lesions of a tuberculous nature; tubercles of the lungs, pleuræ, tubercular peritonitis, tubercular ulceration of the intestines, tubercular meningitis.

*Prognosis* almost always very bad. This disease, essentially chronic as it is, is marked by remissions and exacerbations.

*Treatment*: the same as that of tubercular disease in general; recourse must be had to suitable hygienic means, to tonics and strengthening means.

When the local symptoms assume a certain degree of intensity, particular means must be resorted to: thus when the dyspnœa becomes urgent, local bleeding and blisters; when there is dropsy, dry frictions, and diuretics; purgatives should be avoided, as they might occasion diarrhœa difficult of being arrested. Any accidental complications must be combatted: diarrhœa by astringents united to opiates; local inflammations by blisters rather than bloodletting, which would reduce the system too much.

The last of these articles is from M. Berton on *Bronchial Phthisis*. (No. 15—April, 1842)

*Pathological Anatomy*.—Alterations of the lymphatic glands of the bronchi predispose to inflammation of the respiratory organs and favour the development of tubercles of the lung: witness, says M. Berton, the tenacity, tedious course, and the returns of inflammation of the chest and the frequency of pulmonary tubercles in children. And if these alterations of the bronchial glands predispose the organs of respiration to inflammations, it is equally true that, under the influence of inflammation of a neighbouring organ, the alteration of the bronchial glands makes rapid progress.

What assigns so important a place to ganglionic phthisis in the pathology of tubercular affections is the organic lesions which the presence of enlarged glands may occasion in the neighbouring parts. Though bronchial tubercles may acquire considerable size without producing displacement, yet an extraordinary development of some of these organs displaces the neighbouring parts when they are moveable. M. Berton twice found the œsophagus pushed to the right.

Perforations take place at the point of contact of the neighbouring parts with the diseased glands; consequently the ulcerative inflammations which produce them manifest themselves towards the period at which the tubercular matter softens, unless the glands have a tendency to compress the surrounding organs, for then the adhesions and perforations already take place, whilst the tubercles are still in the crude state. These two occur:

rences were observed in two cases cited by M. Berton. In one, the inflammation of the cyst of the gland, a more intimate adhesion to the neighbouring branches, ulceration and perforation followed the softening of the tubercular matter. In the second, the tubercle was still in the crude state, and its situation explained how, from its tendency to compress the neighbouring organ, an adhesion took place, subsequently ulceration, and then perforation of the compressed organ.

The existence of ganglionic cysts which have passed into the osseous or cartilaginous state, containing cretaceous matter, a thing frequently observed, leads one to think that the softened tubercular matter may sometimes be absorbed either in part or entirely. But the most usual tendency is to be discharged by perforations, which are established chiefly on the bronchi.

One cannot help feeling astonished that enlarged bronchial glands, observed by M. Berton as capable of producing perforations in the bronchi, should be considered by him as incapable of compressing these organs. He explains it in this way; these bronchial glands perforate the bronchi by the process of ulceration occasioned by their contact, so that we may conceive this process set up even before any considerable compression can take place.

*Causes.*—The bronchial glands may become affected, according to M. Berton, when the morbid causes act on the system to which they belong, or on the organs with whose functions they are more immediately associated. Thus, of the four forms which the tubercular affection may assume, according to M. Becquerel, (in the preceding article,) whatever be that which the causes occasion in a tuberculous individual, the bronchial glands may at the same time feel their influence.

Inflammation of these glands is very uncommon, according to Laennec: this proposition is true only with respect to adults: for in the early period of life all the causes capable of developing in an inordinate degree the irritability of the glands and of the lymphatic vessels in general, and of the bronchial and pulmonary glands in particular, dispose them to inflammation and tuberculization; so that tubercular degenerescence of these glands is a frequent result of their inflammation. The bronchial glands soon become inflamed when an irritating cause has directed its action to an organ, from which lymphatic vessels proceed which are functionally related to them.

The author here generalises the influence of inflammation of the neighbouring organs on the production of tubercular degenerescence of the glands. Thus that of the gums accompanying dentition, and ophthalmia and affections of the hairy scalp, occasion swelling, and tuberculization of the glands of the neck; that of the intestinal organs of a certain duration produces tuberculization of the mesenteric glands in young subjects (tabes); in the same way, under the influence of pneumonia and prolonged bronchitis in children, the bronchial glands become inflamed and transformed into tubercles.

The inflammatory origin of such a transformation, says Dr. Berton, appears more particularly evident in *bronchial phthisis*. It is sometimes possible, says the author, to surprise, as it were, the cause producing the

effect, to detect in fact the *tuberculous degenerescence* coming on after an inflammatory process. On examining certain bronchial glands, we find evident traces of inflammation and the production of tuberculous matter differently united and combined. We shall not enter here with the author into the details of pathological anatomy; what we have just said on this subject will suffice to show what the author's opinion is regarding the power of irritation and inflammation as a cause of tuberculization. His opinion is founded on the anatomical examination of the bronchial glands, partly inflamed and partly tuberculated.

Morbid change of the bronchial glands presented itself to M. Berton's researches under three different forms, and what proves inflammation to be an invariable cause of these varied effects, is the constant coincidence of the following pathological states: pneumonia, bronchitis, pleuritis, phthisis. The three forms of alteration in the bronchial glands were:—1st, red, enlarged glands; 2d, glands partly inflamed, and partly replaced by tubercular matter; 3d, glands entirely tuberculated.

Even when inflammation of a viscus or of its appendages may not have preceded the inflammation of the lymphatic glands associated in function with this organic apparatus, still inflammation was to be complained of. The irritability of the lymphatic system may increase primarily and essentially (as in the lymphatic or scrofulous temperament); excitement brings on irritation; the latter induces inflammation and subsequently *tuberculization*. Thus we may conceive the extension of *scrofulous disease* developing pulmonary tubercles in individuals who have never coughed.

Might not, asks M. Berton, the granulations described by Bayle within the pulmonary tissue, be pulmonary lymphatic glands swollen, enlarged and so rendered visible? The existence of these greyish bodies of the size of a millet grain, frequently coincides with that of scrofulous affections: according to Baron, they are often observed in weak and rickety children. Like the scrofulous disease itself, they are seldom observed in infancy before the first dentition.

The question of the influence of inflammation on the production of tubercles is important with respect to treatment.

It is in some degree the immediate cause of this affection. Thus the physician should treat in the most decided manner pulmonary, bronchial, and pleural inflammations in children. The danger of imperfect resolution is to be particularly dreaded at this period of life. With respect to the remote causes, they are to be considered under the head of hygiene. In the first rank are to be considered all those causes which are capable of developing the *scrofulous taint*; such as damp habitation, bad aliment, deprivation of pure air and of light, &c.

Bronchial phthisis is very common in children of a lymphatic constitution during the period comprised between the two dentitions. The greater activity of the lymphatic system in early age, explains this general fatal predisposition of the glands in children.

*Symptoms.*—The *symptoms* of bronchial phthisis have been described according to the ideas suggested by the knowledge of the organs connected with the enlarged bronchial glands and the phenomena which should result from the compression of these organs: impediment occasioned in the

circulation of the blood, hypertrophy of the heart: obstruction of the œsophagus, trachea and bronchi, &c.

An attentive examination of facts induces M. Berton to deny the truth of all these anticipated symptoms just enumerated. We shall present the reader with a rapid glance at the author's remarks. He gives seven cases of bronchial glands enlarged and tuberculated.

In the first no remarkable organic lesion was produced by their presence: in the second and third, there was perforation of a branch of the bronchi; in the fourth and fifth, there was perforation of one bronchus and of the œsophagus; in the sixth and seventh, there was perforation of the pulmonary artery.

Out of these seven cases of bronchial glandular phthisis, paleness and emaciation were noticed only twice; in only one of these patients was there observed a good share of embonpoint; œdema was noticed only once; in three the glands of the neck were engorged: in two they were not so. In all there was some cough of several months' standing. In two the cough was frequent at the time of the examination. No expectoration in any. Embarrassed respiration and great oppression were noticed only twice; in one of these two cases the respiration was abdominal. Sonorous rhonchus once; crepitating rhonchus twice; mucous rhonchus twice. Pulmonary expansion less free than natural in two instances.

In two of these cases percussion and auscultation detected nothing. In those cases in which percussion and auscultation were negative, the trachea, larynx and bronchi were pale, except in two, where the bronchi were found somewhat red. In the contrary cases the trachea, larynx and bronchi were injected; the bronchi contained puriform mucous; there was adhesion of the two pleuræ and of the lobes of the lung; there was observed partial hepatization, pulmonary tubercles, and granulation.

Only once the pulsations of the heart were observed to be extended, and at the autopsy this organ was found to be enlarged. Thrice the state of the skin was noted, and it was set down, as hot, cold, and of natural heat. The pulse which was always regular was observed to be in four patients, 76, 96, 110, 120. In this last case there was some fever. The pulse marked 76 belonged to the child whose heart was found to be enlarged. Great debility in two of these children, one of whom had a frequent, deep cough and the other diarrhœa; headache in one of those that had fever. There was vomiting in two children, who at the same time had diarrhœa, and both were found to have a perforation of the œsophagus communicating with one of the bronchi; one of these two had gangrenous stomatitis. In two cases only was hæmoptysis observed which proved rapidly fatal; in these perforation of the pulmonary artery was observed after death. In one of the two cases where there was fatal hæmoptysis, clots of blood were found in different parts of the air-tubes. Only once M. Berton found clots of blood in the heart; this was the case wherein he discovered no perforation at the autopsy, and in which there had been serous effusion, and abdominal respiration. The aspect of this case is different from those in which ulcerative perforation took place. One would be tempted to consider this difference as the effect of greater compression in this case; but the author, after having said that large tubercles surrounded the origin of the large vessels, adds that no real compression resulted from them.

The bronchial glands when tuberculated and enlarged, cannot, he says in another place, compress the bronchial tubes so as to flatten them, a compression which is not announced by any peculiar phenomenon, such as a particular sifflement, jerking respiration, &c. So that the dilatations of the extremities of the bronchial tubes, which are tolerably frequent in children, should not be attributed to this compression.

The new adhesions of diseased bronchial glands to the neighbouring organs, as also the perforations occurring at the points of contact of these organs with the bronchi, give rise to no particular symptom. With respect to the sternal pain, it belongs, according to M. Berton to the symptomatology of bronchitis.

To suppose that in cases where a communication is established between the tubercle and the perforated bronchus, the absence of *pectoriloquy*, and the expectoration of fragments of tubercular matter, will suffice to throw light on the diagnosis, would be to expose ourselves to serious mistakes. In one of the cases, which was an instance of perforation of a bronchus, there was no expectoration of the tubercular matter, which was softened; the opening of the bronchus was plugged up by a lump of this matter contained in the glandular cyst. Besides children expectorate but little. With respect to *pectoriloquy*, it is very uncommon in children. According to M. Berton vomiting is not a symptom which can throw light on the diagnosis; for besides that, on the one hand, children have a great disposition to vomit during the progress of all their chest affections; on the other hand, it happens that in the cases of accidental communication established between a bronchus and the œsophagus, simultaneously perforated by the purulent abscess and the discharge of the enlarged glandular substance, it happens that, even in these cases, neither vomiting nor coughing takes place, though one might be warranted in supposing, that some portions of the fluids swallowed pass from the œsophagus into the branches of the bronchi. M. Berton has observed children who, under such circumstances, had not coughed after drinking.

It would appear that the author, in his appreciation of the facts, has not sufficiently distinguished from each other the phenomena of coughing and vomiting; and that which is applicable to the one, even according to M. Berton's observations, is not applicable to the other. Accordingly, in the seven cases, which have just been sketched, there was some cough, whilst, in only two of them vomiting took place, and these two patients are precisely those who presented at the autopsy a corresponding opening of communication on the œsophagus and on a bronchus, between which a diseased glandular cyst was found.

Thus, in one of M. Berton's cases, where there was a communication established between the œsophagus and bronchus by the simultaneous perforation of these two canals, M. Berton says, that a period prior to his admission into hospital, this child had been ill, and that he had coughed and vomited. This circumstance, combined with the fact that the edges of the perforations presented no traces of recent inflammation, might induce one to think, as the author himself says, that the vomiting had coincided with the establishment of the communication between the two organs.

In another case there was the same accidental communication esta-

blished between the right bronchus and the œsophagus, by the presence of a softened tuberculated gland, and in this case again there was vomiting in the little patient; this vomiting supervened at the time when the countenance became entirely changed, fever increased and diarrhœa set in. Here we may remark that the vomiting had been observed by M. Berton only in those very two cases, where the autopsy detected a perforation of the œsophagus corresponding to the opening of a bronchus in connexion with a softened gland, a pathological state capable of causing the phenomenon of vomiting; just as the hæmoptysis, promptly fatal in the one case, and very severe in the other, was observed only in the two cases, where perforation of the pulmonary artery was discovered at the post-mortem.

In another of M. Berton's cases there was perforation of the pulmonary artery: measles had occurred at the age of eighteen months; the cervical glands were engorged; admitted into hospital at the age of three years and a half: enteritis, bronchitis; pulse feverish, the abdominal symptoms engrossed all the attention of the physician. Suddenly there occurred severe hæmoptysis by the mouth and nose. At the autopsy some clots of blood were observed in different parts of the air-tubes of the left side. An immense cavity communicated with a bronchial cyst, which itself communicated with the left trunk of the perforated pulmonary artery. There was not a single phenomenon which could cause a suspicion of the morbid process, which was secretly preparing the fatal event.

Must we invariably despair of a cure in cases like this? may we not conceive it possible, that after the evacuation of the softened tuberculous matter, the cyst and fistulous openings may cicatrize? Such cases, M. Berton says, can only be considered as partial, and not definitive. In our analysis of M. Becquerel's essay we have already had an opportunity of observing that this mode of termination was not proved anatomically. Besides, adds M. Berton, when the bronchial glands have become tuberculated, it often happens that tubercles are developed at the same time in the lungs.

The author, by way of recapitulating the elements of the diagnosis, reduces them to the following data: the morbid state of the bronchial glands can only be suspected. Our suspicions acquire probability, if the patient be of a lymphatic temperament; if he carries about with him some marks of the scrofulous taint; if he has coughed for a considerable time; if for the last two or three months he is affected with bronchitis, pneumonia, &c.; scarcely, are there any rational signs, he adds, which can serve to throw light on the diagnosis of bronchial phthisis. The author of the analysis of M. Berton's essay well observes here, that M. Berton does not appear to take sufficiently into account all the aid that may be derived from the comparative method of diagnosis. Let us take, for example, the phenomenon of dyspnœa: if this phenomenon cannot be accounted for in a patient by any other affection, whether this affection does not exist, or whether, if it does, it is not sufficient, however, to produce the great oppression observed; if, moreover, there exists a sternal pain without severe bronchitis, we shall have the elements of an almost certain diagnosis. Let us add the several phenomena which might result from compression of a bronchus (diminished intensity of the respiratory murmur) from compres-

sion of the surface of the lungs (prolonged expiratory murmur, &c.) from compression of the large vessels (palpitations,) from compression of the vena cava (dropsy, œdema;) a group of phenomena indicative of hypertrophy of the bronchial glands, at a time when it could not be accounted for by any other lesion.

Thus to the direct signs of presumption enumerated by M. Berton, we should add the indirect signs arising from the absence of the symptoms, which would characterise another affection equally suspected, that is, we must establish the diagnosis by the comparative method and by the process of elimination.

ETUDES SUR LES RAPPORTS DE LA GROSSESSE ET DE L'ACCOUCHEMENT  
AVEC L'HYGIENE DE L'ENFANT AVANT ET APRES SA NAISSANCE.

*Observations on the Relations subsisting between Pregnancy and Delivery and the Health of the Infant before and after Birth.*

The first question which presents itself to us with respect to all that concerns the health of the fœtus is, the influence exercised on it by the physical and moral conditions of the mother. These impressions may be felt by the infant even before birth. The importance of addressing to pregnant women, useful instruction which may inspire them with correct ideas regarding their new state, and which may withdraw them as well as their infant from the mischievous effects of the prejudices which beset them at the very time when they are most liable to impressions, cannot be questioned.

*Diseases of Pregnant Women.*—Under this head may be included various physiological states, such as eccentric tastes, irregular appetites, &c., which are observed to occur in pregnant women, and which, though they are often but mere annoyances, are still capable of disturbing the functions, and may become dangerous by being allowed to proceed. We shall here describe the effects which these different circumstances may produce on the fœtus, and the means of preventing either the diseases themselves, or their influence on the child.

Pregnancy being a natural state produces no disease of itself; it is only the occasion of the development of some affections which depend on certain dispositions of the economy. Acute diseases; fevers, inflammations, eruptive fevers, and certain chronic affections, produce mischievous effects on the fœtus, the former by their violence, the second by their long continuance. Galen long since remarked that inflammatory diseases cause the fœtus to perish. The child may escape this danger; but then, either the mother, in order to ward off death, subjects herself to a strict regimen, and in this case the child dies for want of nourishment; or else, for the purpose of preserving the life of the child, she takes food, and then the disease becomes more severe. and if the mother is not carried off by it, the infant at least perishes. When, in pregnant women, chronic affections come on: intermittent fevers, cough, jaundice, spasmodic and cachectic affections, they are so much the more injurious to the fœtus in proportion

as they are intense, recent, contagious, as venereal diseases, small-pox, measles, &c.

Such are the sympathies which subsist between the mother and the child, that, according to some authors, circumstances occurring in either affect both. However there are certain morbid dispositions peculiar to the fœtus and in which the mother does not participate.

To the division of pregnancy into the three periods, each consisting of three months, correspond three groups of symptoms, the first of which includes the following phenomena: nausea, vomiting, disrelish for food, depraved, inordinate appetite, cardialgia, pains in different parts of the body, hiccup, vertigo, lassitude, oppression, diarrhœa, loss of blood, cachectic states of the system, weaknesses, syncope, &c. The group corresponding to the second period consists of the following phenomena: cough, palpitations, acidity of stomach, weaknesses, hæmorrhages, relaxation of the uterus, loss of sleep, pains in the loins and thighs, &c. The group of phenomena accompanying the third period consists of suppression or incontinence of urine, difficulty in passing urine, constipation, tenesmus, hæmorrhoids, varices in the legs and thighs, swelling and œdema of the lower extremities, serous discharges through the vagina, spasms of the uterus, peculiar disposition to fall, &c.

All these circumstances, even those which appear least severe, disturb the system, and give rise to diseases dangerous to the mother and child. It is necessary then to be aware of the morbid effects resulting from them in order to be able to prevent them. It must be kept in view that these diseases are not pregnancy itself, but that they take their source in certain general and peculiar causes with which it is important to be acquainted.

To the cessation of the menstrual discharge may be attributed the diseases which come on in the first period of pregnancy; those which come on at other times, to dilatation of the uterus, to its increase in size, and to the compression made by it on the viscera, muscles and vessels.

If women who conceive found themselves at the time in all the conditions of perfect health, they would not be exposed to that long train of annoyances, which distress them during the entire period of gestation. Women who enjoy good health, who take moderate exercise, and adopt a judicious regimen, and are not subjected to painful moral influences, are not exposed to such distressing annoyances, nor their infant to the morbid affections which are the constant consequences of them. If all the organs were perfectly free, and were able to discharge their functions without constraint, if there was not in certain parts of the system an excess of debility and irritability; if the blood, which, before pregnancy, discharged itself periodically only because it was abundant and superfluous, could circulate freely during pregnancy when it becomes necessary; if, in one word, the causes which produce illness and the affections connected with the first period did not exist, we should witness less of the diseases of the two other periods, which are connected with each other, as also with those of the first period; we should not see those cachectic conditions of the system, which compromise the lives both of the mother and the child, produced by those causes, the principal of which is the inequality of the circulation.

Conception produces in women a kind of general shock, which affects



all the senses. In delicate women this shock leaves after it a disposition which may lead to a degeneration of their functions. The new being formed in the uterus of the mother, requires new directions in the distribution of the liquids and the movements of the solids. If the woman possess within her resources sufficient to maintain the play of the new functions, her health will hold up. Let this order of functions appropriated to the wants of the mother and the fœtus happen to become deficient, then annoyances and diseases are sure to come on, which will direct their action to the mother and the fœtus. Thus, in a delicate woman, the periodical discharge of the menstrual flux follows its natural course; she becomes pregnant; on a sudden pregnancy gives entirely new directions to the phenomena of the economy: an irregular distribution of blood in the vessels, an irregular distribution of all the liquids; disorder in the movements of the solids, disturbance in the functions; hence arise, in such a woman, the principal diseases of pregnancy.

If the cessation of the menses were the real cause of the affections to which pregnant women are liable in the first period of pregnancy, robust women would not be more exempt from them than delicate women.

What are the causes of the eccentric and irregular cravings, which make them covet highly-seasoned meats, salted and spiced food, and spirituous liquors? Is the cause of this affection a certain weakness of the stomach, which the women instinctively seeks to relieve by means of food capable of stimulating the digestive organs? Does the impaired or the depraved appetite arise from the circumstance, that in consequence of the imperfect digestion, the juices necessary to this process become changed, as the saliva and gastric juice; or from this, that the bile, badly elaborated, becomes depraved, and from the mixture of these liquids in the stomach, irritations are established in this organ, which blunt and pervert the taste? What we have said of the bile is not a mere theory; it is a fact demonstrated by the irregular excretion of fœcal matters which have a cadaveric odour and a greyish colour.

The cardialgia is a violent pain felt more particularly at the upper orifice of the stomach, and which equally affects the pylorus or lower orifice of the stomach, as well as the rest of this viscus. It is accompanied by swoonings, palpitations, cold sweats, great restlessness, oppression, depression of strength, desire to vomit, spasmodic shivering of the extremities, some general nervous movements, &c. What are the causes of this pain?

1. It is frequently spasmodic and windy.

2. It sometimes depends on the presence of irritating liquids in the stomach and duodenum. This latter kind of cardialgia may be distinguished from the others by the few symptoms which accompany it; it occurs only after a series of bad digestions, whilst spasmodic cardialgia frequently comes on soon after conception.

3. Among the causes of violent cardialgia mentioned in books, we may cite the presence of gravel retained in the urinary passages, and of stones impacted in the bile-ducts.

3. The presence of corrosive poisons taken into the stomach, and of emetics and drastic purgatives.

5. The sudden suppression of an epidemic dysentery.

6. Mental annoyance and violent passion, by the violent impressions which they make on the nervous system.

7. In pregnant women the presence of a certain quantity of blood retained in the membranes of the colon and rectum, carried thence by metastasis into those of the stomach, chiefly towards the cardiac orifice. Such metastases, if they took place, would soon be followed by fever and inflammation, and then other symptoms would manifest themselves besides those of cardialgia.

8. The copious afflux of blood towards the stomach and diaphragm; but we may say that this is but an inference from what has been ascertained by post-mortem examinations in the case of persons who have died of *stomach spasmodic asthma*, and in whom the obstructions to the circulation, and the consequent afflux of blood to the stomach and diaphragm were accounted for by the presence of polypous concretions in the heart.

9. The suppression of hæmorrhoids, the suppression or retardation of the menses, or rather the cause which suppresses or suspends them. Accordingly we often find that in a pregnant woman plethora occasions cardialgia every month, at the time when the menses used to appear before pregnancy. Besides the cardialgia the pregnant woman may feel pains in the region of the kidneys, in the loins, in the breasts, head and teeth. To this may be added the great heaviness of the entire body, lassitude of the limbs, symptoms which all arise from the same sources; delicacy, weakness, irritability, erethism of the tissues or violent tension of the fibres. All these pains may be rendered still more acute by dilatation of the uterus, extension of its ligaments, and the weight of this organ on the painful parts. To the broad ligaments may be referred the pain of the loins, to the round ligaments those of the groins, pubis and thighs.

Erethism of the parts of the pelvis impedes the course of the blood towards the lower extremities; this fluid flows back towards the upper parts; it flows but tardily, and is distributed irregularly. This occasions vertigo and pains in the head, as also an afflux of blood towards the spongy substance of the gums, and then pains in the teeth, slowness and irregularity of the circulation of the blood in the lungs; this gives rise to great oppression and palpitations; then the pulse becomes weak and languid.

When the uterus is suffering, the breasts are ordinarily affected at the same time. As the circulation does not go on freely in them, they swell and become painful; the same thing happens to several women at the approach of menstruation. In plethoric women the retardation of blood in the vessels occasions engorgements, which increase the symptoms attributable to the delicacy of the tissues, to their state of relaxation, as also to their erethism and irritability, phenomena which have themselves a cause independent of pregnancy, and which are always occasioned by abuses committed in diet.

Hiccup, convulsive contraction of the œsophagus and diaphragm, with sudden and sonorous inspiration, is sometimes so constant and so violent that we have seen women actually menaced with suffocation from them. The state of pregnancy being a predisposing cause of this painful convulsion, pregnant women should know how to withdraw themselves from the causes which may induce it. We shall explain these, when we come to

treat of the means of preventing the affections which may come on during the first period of pregnancy.

Pregnant women are often affected with dizziness occasioned by the derangements which occur in the functions of the stomach, and by disturbance of the other organs of digestion. All objects appear to them to revolve around them, and they themselves seem to themselves to turn round. Sometimes this dizziness is announced by precursory signs: heavy dull pain of head, tinnitus aurium, and vomiting. The explanation of this dizziness has been sought for in the pressure made on the nervous plexuses, in the irritation occasioned by the contact of the depraved products of secretion, such as the bile, and in the effects produced by bad digestion. It is well known that, by the effects of nervous communications or sympathies, the stomach suffers, when the head suffers, and that the head becomes soon affected, when the functions of the digestive organs are deranged. These organic sympathies are frequent, more especially in pregnant women of a delicate constitution.

The intestinal fluxes observed during pregnancy are, diarrhoea, frequent discharge of liquid, bilious, serous, and sometimes even purulent matter; dysentery, with frequent and bloody evacuations, accompanied by cutting pains which traverse the entire intestine, universal distaste for solid and liquid aliments, and sometimes by febrile re-action; sometimes there is lientery, characterised by frequent fecal discharges. In these cases such is the state of irritation, and consequently the state of sensibility of the intestine, that it cannot tolerate the presence of alimentary substances, which are discharged half-digested. Another of the annoyances of pregnancy is tenesmus. This state is often a consequence of dysentery, and of inflammation of the rectum; it is sometimes attributable to bilious, acrid humours, which are contained in this intestine, and irritate it: perhaps, in some cases it is owing to the presence of ascarides, or of some tumour around the rectum, of gravel lodged in the neck of the bladder, &c.

It sometimes, though rarely happens that some women continue to have the menstrual discharge during the commencement of pregnancy, sometimes even to the sixth month.

The cachexia which occurs in some pregnant women, is characterized by general disturbance of the functions, paleness and general softness of the skin; in a word, debility, languor, extreme depression, restlessness in the limbs, difficult respiration, stifling and syncope; during the syncope there is cold sweat, pulse imperceptible, loss of consciousness, sensation and motion, the movements of respiration being insensible. All these symptoms may by increasing terminate in those of asphyxia.

*Effects produced on the Fœtus by the Diseases of the first Stages of Pregnancy.*

If the embryo, when it is formed, or when the ovulum is sœcundated, is produced from depraved germs, it participates in their defects, and contains within it a source of deleterious principles, whose development may be moderated by physical education, but cannot be stopped. Hereditary diseases may, if they are recent, be cured by the resources of art; when

inveterate they will be cured only by nature's efforts, that is by time, after passing through several generations.

All the diseases of the mother during the period of pregnancy produce on the child the same final result: they all prevent its regular development; but they produce this effect by acting on the fœtus, some directly by compression, others as it were negatively, by depriving it of the materials necessary for its development.

Without seeking to penetrate into the difficulties of *pathological physiology*, let us examine the effects produced on the child by diseases of the mother during pregnancy. During the efforts of vomiting and coughing, the muscles of the abdomen are strongly contracted; the uterus becomes compressed, and the fœtus may suffer from it. Cardialgia, occasioning disturbance in the functions of digestion, affects all the nervous system, and keeps the fœtus in a state of painful constraint. The same may be said of the colics occasioned by delicacy and irritability, and which are seated chiefly in the uterus. When the mother experiences spasmodic pains, general or partial, occasioned most frequently by mere surprize or sudden fear, it is not to be supposed that the infant can be tranquil under such circumstances. By being developed in the turmoil of the functions of which it must be the product, the child will retain the imprint of this confusion; it will be born weak, and with a bad constitution. The shocks which violent hiccup communicates to the uterus by the contraction of the abdominal muscles compress and torment the fœtus. In tenesmus the viscera contained in the pelvis are made to contract with pain. The uterus compressed by the muscles of the pelvis contracts on the fœtus, and interferes with the delicate progress of its development. Such compressions, being frequently renewed, keep up in the parts which are the seat of them, and especially in the uterus, a constantly increasing irritation, which threatens the fœtus with all the dangers of inflammation. Fever is lighted up, the child suffers more and more, and soon dies. Dizziness has no influence on the fœtus except through the causes which produce it; it then becomes exposed to all the consequences of organic and functional disturbances of digestion, and thus dizziness may be ranked among the affections which deprive the child of nourishment.

Distaste for food, inordinate and depraved appetite, by exposing the mother to the inevitable consequences of bad nourishment, impair the purity of the liquids with which the fœtus should be nourished, and on which the strength or weakness of its constitution will depend. Intestinal discharges, by disturbing the process of digestion, deprive the liquids and solids of their reparatory elements, and the blood becomes impoverished. Hence, with respect to the fœtus, there are the same privations, as those which occur to the infant at the breast when its nurse is insufficiently or badly nourished.

Periodical discharges of blood in pregnant women with a strong constitution, when they are not too heavy, have the effect of preserving the mother and fœtus from certain effects to plethora, which would impede the nutrition of the child. The same, however, must not be said of those discharges called hæmorrhages, and which do not come like the preceding from vessels destined to yield the blood of the menses, but from the interior of the uterus, whose vessels have become relaxed. These losses of blood,

like the intestinal fluxes and the cachectic state of the mother, rob the fœtus of the nutritious juice necessary for its growth. The element of nutrition for the fœtus becomes insufficient every time the impoverished blood of its mother which was to yield it, does not find the means of repairing its losses in a sufficiently rich chyle.

Thus all the untoward circumstances which befall the mother re-act upon the child and arrest its development. If the child does not perish in utero, and if it should see the day, it is only to live a sickly life, from which it will probably never emerge. The principles of debility and of disease, which it has received, whether from the germs of its conception, or from the elements which should keep up uterine life in it, are so many sources of chronic diseases. Hence delicate, feeble children, and calamities without end for society, as well as for private families. We shall endeavour to point out the means of preventing all this.

The maternal feeling is not one of those feelings which it is necessary to endeavour to excite in order to obtain from them all the good of which they are capable; but by its tendency to go into excess, and by the multiplicity of circumstances which call it into action, it is one of those feelings which require to be instructed and directed. To be sure a mother's solicitude has the advantage of instinctive inspirations more valuable than any precepts of ours; but we know full well that ignorance and prejudices often blind it, and carry it beyond the natural indications.

Hiccup arises most frequently, in pregnant women, from bad digestion, and from the presence of undigested matters in the stomach. It may result also from congestion in this organ. It is in this way that the impression made on the diaphragm by the pressure of the stomach on it, manifests itself. Hiccup is more or less frequent according to the degree of the irritation which excites it. In acute diseases inflammation may cause it; it may come on as the effect of surprise or sudden fear. Pregnant women being already predisposed, by their great susceptibility of impression, to surprise, and fear, they will easily see of what importance it is to keep their minds free from all such occurrences, from those prejudices which seldom fail to disturb young mothers either for themselves, or for their child, more especially during their first pregnancy.

Intestinal discharges come on in pregnant women often in consequence of excessive indulgence in food, and more especially if it be unwholesome. Such matters disturb the great function of the alimentary canal, which sometimes expels them rapidly, and sometimes retains them for an indefinite period. Hence arise a deficiency of nutrition and the disastrous consequence of an irritation which continues after the discharge of these unassimilable substances, by the depravation they cause in the digestive juices, and by the organic modifications which they leave after them. Women must be careful to resist those longings for unwholesome food which are never so imperious as that they may not be overcome. Those women would be culpable both with respect to themselves and to their child who, when apprized of the mischievous consequences of indulging in such abuses, would still entertain the foolish idea of wishing to render themselves interesting and to draw attention to themselves by such indulgence.

Excremental diarrhœa is usually the effect of an immoderate use of rude, unwholesome food; of the abuse of heating drinks, and of ex-

cessive indulgence in food even of a good quality. These indigested substances remain some time in the intestine, become corrupted there, irritate it, and produce diarrhœa, which generally is not of long duration, especially when, for the purpose of checking it, a proper regimen is adopted; but if the patient neglect to pay scrupulous attention to the nature of its causes, the evil continues its progress. Serous diarrhœa arises from a series of laborious digestions. The glands, whose office it is to supply the intestines with the viscid matter destined to line their parietes in order to facilitate the passage of the excrementitious matters separated from the chyle, now retain this matter, which becomes more dense and acrid, and irritates the mucous membranes, and thus is produced serous diarrhœa. If the digestive powers are not re-established, this diarrhœa becomes chronic and colliquative. Bilious diarrhœa arises, in consequence of bad digestion, from the depravation of the bile, which produces on the membranes of the intestinal canal the effect of a drastic purgative.

Dysentery has also for its anatomical cause certain consequences arising from irregularities in diet. Two causes may occasion the flow of the menses notwithstanding pregnancy: plethora, and relaxation of the vessels. In plethora it is the discharge of a superabundant blood beneficial to the mother and child, provided it be not excessive. When natural, it is periodical and occasions no disturbance in the functions nor any pain. When it is not natural, as in delicate, lymphatic females, it takes place at the expense of the strength of the mother and of the nutrition of the child. In this case, as we have already mentioned, it is a loss distinguished from the regular menstrual discharge by its variable duration, its irregular periods, and by the absence of the signs of plethora. The slightest exertion renews it. The patients become faint and languid: they experience a sense of shivering, momentary horripilations, nausea, anxiety, a sense of stifling, and palpitations; lumbar pains towards the pubis, spasms in the hypogastric region, or rather in the organs of gestation. If these consequences continue long, they endanger both mother and child. Among the causes of these losses of blood, we should principally note previous miscarriages, fluor albus, excesses at table, more especially an indulgence in spirituous liquors, frequent watchings, violent passions of the mind, &c. Serious losses of blood may arise from some accident which has happened to the fœtus, and which has acted on the adhesions of its covering to the uterus, and thus separated the vessels which united the uterus to the placenta.

The separation of these two organs is to be prevented by avoiding the causes which may induce it, viz. falls, violent efforts, convulsive coughs, sneezing followed by a great shock, attacks of hysteria, &c.

It is after the disturbances induced by bad digestion that the cachectic state, so fatal to the infant, is generally established in the mother.

We shall close our examination of the causes of the diseases of the first period of pregnancy by that of the causes of syncope and swooning. These depend on the impoverished state of the liquids, and on relaxation of the solid parts of the system, induced by sanguineous discharges; on the slightest motion, or the least mental excitement, women in this state are liable to a series of annoyances, their limbs bend under them, and they

fall into an alarming degree of inertness. It is by removing the debility that these consequences are to be obviated.

*Influence of Air.*—Though the fœtus does not breathe in utero, still it is influenced by the air; as a vitiated atmosphere alters its constituents just as well as if it respired. If the south wind prevails during the Winter, if the season is rainy and the Spring cold, pregnant women, who are to be confined in this latter season, are very much exposed to miscarry; if they go their full time, their children are languid and weak. Wherever the South wind prevails during Winter, it keeps the atmosphere more rarefied, consequently lighter, and not heavier, as is usually stated; this renders the respiration more difficult, since the lung receives a less quantity of air. At the same time that the air is rarefied by the South wind, it is hotter; and if humidity be united to this heat, the solids of the system become relaxed; the density of the fluids diminishes, and the diseases depending on this state of the system manifest themselves. Under such a combination of circumstances miscarriages must be frequent, and the children that may be born at the full term cannot but be miserably feeble; and if after such a Winter a cold Spring should come on, few children can hold out.

All derangements of the seasons are injurious to pregnant women. Consequently every season that is too hot, too cold, too moist, or too dry, exercises on the fœtus a mischievous influence, which disturbs its functions and enfeebles it, if it does not destroy it. All these derangements and irregularities of the atmospherical constitution merit especial attention on the part of pregnant women, in order that, by adopting the necessary precautions, they may secure themselves against the diseases which may befall them and their child. The variations of the atmosphere and the sudden changes of the seasons produce in the system, both of mother and child, corresponding changes, equally sudden and unexpected; they surprise the body before it is yet prepared to encounter on equal terms the external agents which assail it.

At all periods of pregnancy, but chiefly at the first period, the infant will not possess within itself resources sufficient to resist such attacks. From all this it appears how essentially necessary it is that pregnant women, especially those of a delicate constitution, should be able to appreciate and select the air which is most suitable to their temperament, and to the nature of the inconveniences to which the character of their constitution exposes them. Provided they reflect carefully, they will be better able to select for themselves than the most skilful physician could do for them, the atmospheric medium best suited to the peculiar infirmity of their constitution. If of a dry temperament, a hard, inelastic organization, they will select a moist atmosphere, which will have a tendency to impart suppleness to the tissues. They will find themselves ill at ease if exposed to a keen air, or to the North wind. They will avoid very elevated situations, the sea-coast, &c. If of a humid temperament, and a soft organization, they will prefer a keen dry air, in which they will always find themselves sustained and strengthened. They will avoid moist and marshy grounds, low situations, the vicinity of rivers, &c. If they cannot choose the atmosphere most congenial to them, they should

be careful to prevent, by all possible precautions, the ill effects of that in which they are obliged to live.

It must be admitted that the precepts which have been here laid down, are not suitable to all pregnant women. The conditions of life would require a special set of hygienic rules for each; so that to draw up a truly practical course of hygiene, it would be necessary to enter into the detail of all the cases that may possibly occur in the different conditions of life. This however being scarcely possible, we must be content to lay down general directions and rules. We must first suppose that women have not to devote themselves to any occupation capable of diverting their attention from what they owe themselves during pregnancy. To those who are so circumstanced, the precautions about to be given may at least prove useful. With respect to those who by the exigencies of their circumstances, cannot profit altogether by our counsels, if they do not find in them every thing suitable to them, they will learn from them at least to withdraw themselves from the most injurious influences. They will know what is beneficial and what is injurious to them.

When excessive heat prevails, they will naturally select during the day the coolest place, just so far as to keep the heat of their body moderate. They will keep their rooms cool, say some authors, by strewing leaves and flowers over them. Such a practice, useful as it may be during the day, would be mischievous at night. In the light of the day, in fact, the green parts of the plants absorb carbonic acid from the air, decompose it into carbon which they absorb, and into oxygen which they give out to the atmosphere so as to keep it pure. During the night, on the contrary, they absorb the oxygen of the air, which thus becomes less respirable, and exhale carbonic acid, which renders the atmospheric air impure. From these data we may explain what would happen to a pregnant woman, who should scatter flowers over her apartment, into the interior of which she would intercept the entrance of the light, in order to keep out the heat, so as to keep up in it a kind of half-day. Under such circumstances the pregnant woman, whose functions are performed with enough of difficulty in consequence of her state, would become a prey to a sort of slow asphyxia, ruinous both to the mother and the child. It is in consequence of the great quantity of carbonic acid given off in crowded rooms and large assemblages of persons, that pregnant women are advised to absent themselves during their pregnancy from such places, in which they cannot admit from without a quantity of pure air capable of counterpoising the impure air exhaled by the persons so assembled.

They will therefore be careful to keep the places where the live cool and healthy by allowing a circulation of air, and by keeping the windows shut to the South and open to the North. To moderate the heat which they may feel within them, they will have recourse to the use of cooling vegetable infusions, such as light lemonade, &c. In the use of such drinks they should consult their stomach. If they complain of sourness of stomach, acids are not fit for them, and the use of syrups should be interdicted, as the sweetest syrups often become sour. In such cases water in which some nitre has been dissolved is the best drink.

During Winter they must secure themselves from the impression of cold. Their good sense will not yield to the caprices of fashion, and they



will not expose their chest uncovered to the mischievous effects sure to result from such a compliance with usage. If at all times the insensible transpiration is useful to women, it is particularly so during the period of pregnancy. The excrementitious, transpirable matter, retained in the system becomes mixed with the nutritious juices of the fœtus, and communicates its pernicious qualities to it. A moderate degree of heat must be kept up in their dwelling. Too great a heat rarefies the internal air. Hence for the mother disturbance in the functions of respiration and circulation; uneasiness, and sleeplessness, which, with respect to the fœtus, prove so many causes of death.

*Regimen of Pregnant Women.*—To establish constant rules with respect to the diet of pregnant women, it would be necessary to consider in all their infinite variety, the various contingencies which complicate, or may complicate the state of pregnancy; that is, we must foresee and suppose all possible cases. We shall confine ourselves to include them under some general rules, leaving the physician to follow, in a great variety of cases that may occur, the indications which may present themselves at the time.

The diet of pregnant women should vary according to their strength, constitution, habits, according to the nature of their annoyances, and according to the periods of their pregnancy, &c. &c.

Aliments injurious in their nature are principally so to pregnant women; such are indigested, heating, irritating and diuretic aliments; those which develop much gas, salt, smoked, spiced meats, &c.

The disturbance of the functions being progressive, the system becomes gradually prepared for the progressively increasing modifications which it undergoes, and the health of most women, during their pregnancy, does not deviate so far from its normal state, as to induce the necessity of any serious change in the manner of living.

Robust women, accustomed to exercise and exertion, should continue the use of strong food, provided it be wholesome; those who are delicate, should use succulent food, always choosing that most easy of digestion. If in some cases there be a necessity for changing the mode of living of pregnant woman, it would be dangerous to do it abruptly. If the woman used, before pregnancy, unwholesome diet, and if, on becoming pregnant, she wished to take proper nourishment, suitable to her situation, she should do so with considerable circumspection. We should also gradually prepare the resistance to be made to depraved longings, so as not to thwart them abruptly.

Those who feel distastes, nausea, and a sense of fulness, ought to subject themselves to a moderate diet, so as not to interfere injuriously with the fœtus; they should not restrict themselves to the use of aliments for which they feel a distaste: in this case, Nature herself often points out the best kind of food: we should observe the preferences with which she instinctively inspires women, and should make it a rule to follow these natural indications. If she feels a dislike for animal food, she should choose among vegetables, not those which may be the best, but such as she may prefer, of whatever quality they may be. We do not mean to say that we should

yield to all the caprices of a pregnant woman, but only that we must not resist those cravings which evidently are not injurious.

The physician should carefully investigate the causes of the distastes, and of the irregular appetite. Should they arise from an alteration of the digestive juices, he should do every thing to bring back these fluids to their natural state. If they arise from the presence of slimy matters in the *primæ viæ*, he should endeavour to remove them by gentle laxatives. In the first period of pregnancy, irritating purgatives would injure the *fœtus* and might even destroy it. If there be some critical circumstances, in which we may be obliged to have recourse to them, it is for the physician alone to decide with regard to the indications taken from the disease, its symptoms, causes, and dangers.

To remove *acidities* of the stomach alkalies are to be employed. If such symptoms are occasioned by a change which has supervened in the state of the solids, for instance, by the tone of the fibres being increased by irritation, or by their becoming relaxed; in the former cause diluents and demulcents are to be employed; and, in the latter, means of an entirely opposite character. In case of considerable relaxation of the solids, it used to be recommended to season the food with mild aromatics, but in small quantity. For this purpose *canella* was prescribed.

Should the cause of these modifications of the digestive functions be the mere displacement of the organs, we should endeavour to place the woman in such positions as may be most likely artificially to restore the equilibrium. Whatever be the distaste for food felt by a pregnant woman, she must not restrict herself to too severe a regimen. The fluids of the system, when they are not repaired and renewed by sufficient nourishment, undergo chemical changes; they soon become depraved and cause disturbance in the several functions.

Neither pregnant women, *fœtuses*, nor children can tolerate abstinence; it is injurious to them even in their diseases, when it is carried too far, and especially when the pregnancy is far advanced. There is required on the part of the physician the most assiduous attention; he has ample material for serious reflection for the health both of the mother and child, when he is called in to attend a pregnant woman in sickness. We do not here allude to the method of treating the disease medically, the state of pregnancy being taken into the account; it is now a question of hygiene, viz. of the regimen to be recommended in such a case: to reconcile aliment with disease, and its treatment with the annoying sensations experienced by a pregnant woman, to vary it according to the symptoms and the indications which may present themselves for each patient, to take counsel from experience, and instruction from science, such are the duties of the physician under such embarrassing circumstances. Such is all that can be here said on this important subject.

What has been just said on the subject of regimen, is applicable to all the periods of pregnancy; there is, however, a difference to be established in this respect between the commencement and latter periods of pregnancy. When the *fœtus* has acquired a certain degree of development, the mother must supply it with a corresponding portion of nutritive materials; she should therefore never subject herself to severe or prolonged

abstinence. Another remark which we think necessary in this place, is this : the compression which the stomach undergoes towards the end of pregnancy requires that the sufficient quantity of food be taken in divided portions ; a little at the time and often. At the commencement of pregnancy, on the contrary, the fœtus requires but little nourishment. Its development takes place imperceptibly ; a too abundant nutritious juice would produce dangerous engorgements in its imperfectly developed organs. The fœtus would thus perish from the superabundance of the materials destined to favour its regular evolution. We shall now give some advice with respect to the liquids most suited to pregnant women.

Pregnant women ought, for the sake of their child, to pay great attention to the quantity and quality of their drinks. In the first period of pregnancy, more especially, the fœtus is of an extremely delicate organization ; isolated in the uterus, it adheres to it by only a very feeble force. The slightest accident effects it and disturbs the regularity of its nutrition ; a mere nothing almost will them compromise its fragile existence. The *embryonic* state of the fœtus, therefore, will not admit, on the part of the mother, of the abuse either of aqueous drinks, or of spirituous liquors. It is when they are taken in excess, that aqueous drinks may injure the child. With respect to strong liquors, they are absolute poisons to the infant, their action being to harden the tissues and coagulate the fluids of the system. Animals furnish us with a striking instance of sobriety as a preventive means ; among them the mothers, during the time of gestation, are exempt from the accidents to which women are exposed ; this exemption they owe to their sobriety, to the choice they make of that kind of food which is always suitable to their nature.

The state of pregnancy, whilst it is a physiological and a natural state, is, notwithstanding, to the female the occasion of strange feelings and sensations, which place her, in some measure, in the intermediate place between the state of health and that of disease. Accordingly, in this hygienic sketch, we shall not attempt to treat of therapeutic substances : but as the woman's state may occasionally call for the employment of medicinal substances, it may not be amiss to make some brief and general remarks on the action of medicinal substances, among which pregnant women will recognise those of which they sometimes make an injudicious and dangerous use. When instructed, on the one hand, respecting the different properties of medicines, and, on the other, regarding the organic conditions and morbid dispositions in which the state of pregnancy places the mother and child, they may become more prudent.

With respect to the preparations, the use of which is sometimes recommended to pregnant women, in certain cases, by ignorance and prejudice, we shall here make some remarks. As our limits will not allow us to attack them individually, we shall include them all under one general head of instruction concerning the properties of certain classes of medicines. This instruction being intended to prevent abuses in the employment of medicines and not to lay down rules for prescribing them, we shall refer to those only which are most known ; among which are those most frequently employed by people in ordinary life, who will find in this enumeration some notice taken of the noxious qualities of certain substances,

whose employment has been consecrated by abuse, by introducing them on our tables among our ordinary articles of diet, whether solid or liquid.

1st. Tonic substances: these increase the tone of the organs; their action is slow, but of long duration. They are for the most part bitter; in some bitterness and astringency are combined. Some have an aromatic odour. Tannin, gallic acid, and the bitter principles predominate in simple bitter tonics; as lesser centaury, the hop, *carduus benedictus*, chicory, &c.

Bitter astringents: cinchona, willow, &c.

Aromatic bitters: absinthium, camomile, &c.

Mineral tonics: iron, and its preparations, constitute a very powerful tonic agent; it is employed in all diseases characterised by paleness, debility and an impoverished state of the blood: iron-filings, chalybeate wine; various pills, whose base is some preparation of iron, as Bland's pills; a preparation of chocolate and iron, which goes by the name of *chocolat ferrugineux de Colmet-d' Aage*. Some practitioners will have it that there are two methods of tonic medication; the one analeptic, and the other neuro-sthenic. The first includes only iron; the second includes all the *bitters*.

2nd. Astringent substances: they have a more or less acid taste. Their action scarcely occasions any general phenomena. They produce a condensation of the organs, and an occlusion or closing of the minute vessels; they diminish and sometimes suppress natural discharges. Hence their employment in hæmorrhages, mucous discharges, diarrhoea, &c.

Mineral astringents: sulphuric acid; nitric acid (with alcohol); alum, tartrate of iron and potass; acetate of lead; and lime-water.

Vegetable astringents: the bark and acorn of the oak; rhatany; pomegranate; the red rose; agrimony; sorrel; syrup of quinces; dog-rose; walnut; lemon.

3. Stimulating substances: they almost all have a strong, penetrating, aromatic odour, a hot, smart taste; which, however, is not of any duration. They quicken the circulation, increase the animal heat, and seem to exert a specific action on the nervous system. The most energetic among them have an immediate action; these are what are called *diffusibles*, such as alcohol and ethers. Some exercise their action on almost all parts of the system, whilst others at the same time stimulate more particularly one organ or function; ergot of rye, rue, savine, direct their action to the uterus; Virginian snake-root to the bronchial mucous membrane, &c.

Vegetable stimulants: among these may be classed the various generous wines; alcohol, and the ethers; the various essential oils; camphor, musk; ginger, pepper, orange flowers and leaves, aniseed valerian, balsams, gum-resins, and others too numerous to mention.

Stimulants from the animal kingdom: ammonia, and its preparations; phosphorus, creosote, musk.

Specific stimulants of the uterus, or substances, which excite the menses and bring on abortion; ergot of rye, rue, savine, saffron, fetid gum-resins, ammoniacum, ferruginous preparations, &c.

These substances having a specific stimulating action on the uterus, it will be obvious that their employment, during pregnancy, even though they may not be pushed far enough to bring on abortion, may prove fatal to the child; and yet some of these substances are frequently recommended during pregnancy for the use of the debilitated mother and her infant; as, for instance, the preparations of iron. The contradiction is but apparent. In this case, in fact, these substances are not recommended to combat the debility of the uterus, and as local stimulants of this organ, but, in consideration of the general debility, as tonics and general stimulants, they being in fact tonics rather than stimulants.

4th. Delibitating substances: these diminish the action of the circulation, and consequently that of most of the great functions of the animal economy. This class includes two orders of substances.

Cooling substances, or temperants: lemon-juice, tartaric acid, vinegar, acidulated fruits, such as oranges, gooseberries, strawberries, cherries, &c. 2nd. vegetable emollients; gum, marsh-mallow, sago, tapioca, rice, barley, sweet-almonds, chocolate, &c.

Emollients from the animal kingdom: veal broth, gelatine, insinglass, cow's, asses', and goats' milk, the flesh of young animals.

The frequent use of diuretic medicines must be avoided by a woman in the state of pregnancy, such as squills, foxglove, aconite, colchicum, &c.

There are several of the substances just enumerated, which individually are incapable of injuring; but as they may enter into the diet which some women prescribe to themselves in combination with others of the same class, it was as well to set down as injurious the entire list of these articles, though separately they may be very harmless. Thus, for instance, the diet of a pregnant woman, if exclusively constituted of emollient alimentary substances, may, by depressing the principal functions in the mother, retard the development of the child.

It will be observed that, among debilitants, will be found a considerable number of nutritious and analeptic substances. Such, for instance, are the different *fæculæ*, gelatine, harts-horn, jelly, &c. These substances, in consequence of their ready assimilation, may constitute a nutritious diet for an enfeebled constitution, which, during convalescence from a disease, requires to recover its strength gradually; but the exclusive use of such aliment would constitute a delibitating regimen for a pregnant woman; who, without having lost any of her strength, requires to augment it, in order to share it with the new being, which is being developed within her. There is, however, a period of pregnancy, that of the early months, when the woman must use light food and that of easy digestion, such as *fæcula*, animal jellies, &c.

After having alluded to the action of medicines on the system of the mother and child, we may observe that iced drinks, whatever be their constitution, cause violent colics and may bring on miscarriage. We shall now make a few remarks on heating drinks and on food of the same quality.

The stimulating action of substances with a strong, penetrating, aromatic odour and with a hot taste, is intense and immediate. The continued use of such meat and drink hurries the circulation, increases the animal heat, agitates the whole nervous system, and thereby disturbs the several

functions; pains are felt in the region of the heart, hæmorrhages follow; and if the fœtus, the victim of these abuses, does not perish, it will carry, from its birth, the germs of constitutional diseases, such as many manifest themselves in a frame prematurely vitiated at the very fountain-head of life. From this it must not be inferred that we are to proscribe from the regimen of a pregnant woman those cordial drinks so often necessary in consequence of the faintings and swoonings to which the pregnant state exposes them. We should even endeavour to prevent their occurrence by the use of generous wine. If the woman is of a delicate organization, or is afraid of giving birth to children that are liable to inherit the feeble constitution of their father, she should make use of tonics during the entire period of her pregnancy. Among the substances endowed with a tonic property, there is none whose powers are better established, or more universally recognised, than iron and its various preparations. A happy application has been made of this substance by M. Colmet-d' Aage, an apothecary in Paris, when he conceived the combination of a powerful ferruginous preparation with an article of ordinary diet so agreeable to the taste as chocolate, so as to produce a medicated aliment easily borne by all stomachs. However it happens that in ferruginous chocolate, the mixture of iron and chocolate retains no trace of the inky and styptic taste of iron, it is a privilege which this preparation enjoys exclusively; it is also that which is most easily given to infants, and for the longest time to adults. This preparation is particularly recommended by the first medical men in Paris to pregnant women, whose capricious stomachs perform their functions so badly, and whose appetite is so often perverted and destroyed.

THE CLIMATE OF THE SOUTH OF DEVON, AND ITS INFLUENCE ON HEALTH. &c. &c. By *Thomas Shapter*, M.D. 8vo. pp. 258. Churchill, London, 1842.

DEVONSHIRE is running a sharp race, in the sanitary course, with Italy—Torquay with Nice—Hastings with Pisa—and Undercliff with the Eternal City itself! The contrast between the bright skies of Italy and foggy atmosphere of England has led more people over the Alps, in search of health, than an accurate investigation of the bills of mortality in both countries would have done. That a climate which consigns a twenty-fifth part of its inhabitants annually to the grave, should be preferred to one where only a fortieth or fiftieth part pay the penalty of Nature, is strange. There is no doubt, however, that certain seasons of a climate generally unfavourable to longevity, may prove salutary in certain complaints and constitutions. Thus a *winter* in Italy may mitigate a pulmonary complaint contracted in England; but it is only in the early stages of such maladies that the mildness of Roman air can at all prove serviceable. If this truth had been well understood, the pyramid of CAIUS CESTIUS would not now

sweep its funeral shade over the tombs of so many sons and daughters of Albion—who left their native homes only to mingle their ashes with those of the Cæsars, the Antonines, and the Neros, in the animalized soil of Rome!

The work under Review is divided into two parts—but the second part being geological and hydrological, it is to the first part only that we can refer in this article.

“The more striking characteristic of the climate of Devon generally, is that of being warm and moist: though this is partly owing to its latitude, yet much is due to its position as regards the ocean, forming, as it does, a portion of a large promontory, or imperfect peninsula, projecting westward into the Atlantic, so that nearly one half of its circumference is sea coast. In this latter circumstance alone conditions exist, which not only ameliorate and soften its general character, but likewise tend to produce an equability of temperature, which is not common to larger breadths of land.” 2.

The surface of Devon presents a pleasing succession of undulating hills and luxuriant vales, in the highest state of cultivation, and richly wooded throughout. The mean annual temperature is  $52^{\circ}$ ,  $29$ —about one degree higher than that of London, or probably more. Equability of temperature is a striking character of Devon—the difference between the warmest and coldest of ten years being only four degrees. In the seasons, the greatest change of temperature takes place between the spring and summer, amounting to more than  $12\frac{1}{2}$  degrees—the least variation is between winter and spring—being less than 8 degrees. This is very different from London and other places in England.

The barometrical phenomena are not materially different from those observed in London, except in showing a slighter amount of higher measurement, together with a tendency to less variation.

The moisture of Devonshire is proverbial, and this character is fully sustained by Daniel’s hygrometer. The winter season is the most damp—the autumn is next, and the spring and summer are comparatively dry. The dampest month is November. “In general terms it may be stated that, from March to September, the climate is dry—and during the remainder of the year humid.”

The mean annual fall of rain in the southern part of Devon is about  $32$  inches—seven inches more than in London. The largest quantity falls in the autumn and winter—the least in the spring. The number of wet days is not so great in Devonshire as in London. Frost, during the winter and spring, is not unfrequent, but is seldom of any duration. Except on the high grounds, snow seldom continues on the ground more than a few days. The great prevailing winds are from the west and north-west. They are much more frequent than in London. The following is our author’s summary of the climate of the South of Devon.

“It may be seen from the previous sketch that the chief characteristic of the climate of this district is that of being warm, soft, mild, equable, calm, and free from storms; though subject to a large share of rain, yet it seldom occurs that a whole day is so unceasingly wet, as not to afford some hours, whether early or late, sufficiently fine for outdoor exercise. During the winter season the temperature rarely maintains for any length of time a degree so low, as to render the climate particularly inclement; frost seldom occurring, and rarely of long con-

tinuance. The air is usually damp; but from the general prevalence of warm westerly winds, the moisture which it contains is not cold and chilling. A general impression prevails that this, which may be styled the muggy weather of Devon, is unwholesome, such, however, is not the case, as will be seen in the sequel; in fact the accompanying temperature takes from it the usual injuriousness of such a condition. The character of the spring during the early part does not materially differ from the winter, excepting that the air is less damp, and the days less rainy. Towards the close of this season north-easterly winds somewhat prevail; these should be particularly guarded against, especially by the delicate, as from their piercing and cold nature, they are apt, by repressing the cutaneous functions, to cause internal inflammation. The summer is rarely very hot, and though showers are frequent, yet it may be considered a dry season. The winds which blow, for the most part from the north-west, are cooling and refreshing. The evenings and nights, however, are sometimes cold and damp, and, therefore, exposure at these times, with only summer clothing should be avoided. The autumn is warm, and inclined to be damp and rainy; it is peculiarly the season for the Devonshire drizzle, which is a rain so light as to deposit itself as a thick dew, attended by a grey-clouded sky: the winds during this season are chiefly from the west. By way of marking the general mildness of the climate, it may be mentioned that many of the tender and delicate exotics flourish in the open air, and are not destroyed by exposure during the winter season. During this period also, it is not unfrequent to see the hedges studded with many of the native flowers." 39.

We must pass over a great many pages of the work treating of the most prevalent diseases in Devonshire; because few people go thither to contract diseases, but to get rid of them. We must make an exception, however, in the subject of

#### DISEASES OF THE LUNGS.

Seventeen per cent. of the whole catalogue—or about a sixth of the whole of the diseases of Devonshire, comes under the head of pulmonary complaints. Of these, a large proportion consists of simple inflammation of the bronchial tubes—the symptoms of which we need not describe. Chronic catarrh is very common among the lower orders. Bronchitis prevails in the spring and winter.

"Consumption forms a large proportion of the diseases of the chest in this district; it occurs in all its various forms, though, most usually, the cases are protracted and lingering.

Amongst the cases of phthisis, a few were instances of pure phthisis laryngea. In these no very marked symptoms of any affection of the lungs were observable; on examination after death, however, they were invariably found much impacted by tubercular deposit. A few cases have also occurred of phthisis, complicated with syphilis. In these the alterations of disease were quite remarkable: at times the chest complaint would appear to be entirely suppressed, while syphilis, in its various forms of periostitis and ulceration, was rapidly progressing; then, on these subsiding, the more fatal affection, would develop itself; eventually they died of consumption in which both the perspiration and expectoration were peculiarly offensive. Three cases of mental delusion, in connexion with consumption, and after free salivation by mercury, have occurred to my observation, with so much singular coincidence, that I am induced not only to refer to them here, but to style them phthisis, complicated with mercurial irritation.



In each the patients presented the usual character of the incipient stage of phthisis; but superadded to this was an impression that their whole system was impregnated with mercury, which in two cases had been taken for syphilitic affection, and in the third for an accidental attack of swelled testicle. So strongly rooted was this impression that they maintained they smelled it in their perspirations, tasted it in their saliva, were convinced it was in their secretions, and that to this, and this only, was attributable the unpleasantness of the symptoms they were labouring under. 'This state of things in each occurred until the symptoms of phthisis became fully developed, which was usually sudden; then the delusion subsided, and the patient went through the ordinary course of a very rapid decline.' 92.

But we must now pass on to notice some particular localities.

#### EXETER.

This city occupies the flat summit and the declivities of a hill, on the eastern bank of the river Exe, one hundred and fifty feet above the level of the sea. It thus presents great facilities for cleanliness and ventilation; but we fancy that few invalids will pitch their tents in the Devon Metropolis, who can extend their steps to

#### TORQUAY.

This has, for several years, been celebrated as a suitable winter residence for pulmonary invalids.

"It is situated in a cove at the north-west angle of Torbay. This cove is surrounded by three hills, 'nearly equal in elevation, (180 to 200 feet) and similar in general features. Between them run two tortuous valleys, one towards the east, the other towards the north. It is on the shores of the cove, along the slopes of the hills, and in the gorges of the valleys, that the town is built,' facing the south-west, and sheltered from the north and east. It presents the appearance of a number of rising terraces, which receiving the direct rays of the sun, unchilled by the colder winds, form safe and pleasant walks for the invalid. The scenery from these terraces is peculiarly beautiful; immediately beneath is expanded the bay, like a small inland sea, on every side bounded to the view by wooded heights.

The climate of Torquay is generally understood to be amongst the warmest and most genial upon the coast, but in the absence of sufficient information, its accurate position in this respect cannot be stated. Many observations on its temperature, &c., have certainly been registered; more especially by Mr. Blewitt, Drs. Coldstream and Barry, but at such irregular times, and for so short a period at each time, that it is quite out of the question deducing from them anything like satisfactory averages. From these, however, it appears that its mean annual temperature is rather more than fifty-one degrees and a half (51°.65,) nearly half a degree warmer than Exeter; and the mean winter temperature, above forty-four degrees (44°.25,) which is more than three degrees warmer. The mean difference between the temperature of successive days in the cold season, may be stated at 2°.7; its daily range appears also to be small. The general mildness of this place may be somewhat appreciated by the statement of the lowest degree of cold experienced in the generally severe winter of 1837-8, being only 21°, while in Exeter it was 17°, Bristol 8°, Kensington 0, and at Sandhurst 8° below zero. Dr. Coldstream, during a winter residence at Torquay, (1832-3,) made a series of observations upon the temperature of his bed-room, at 7 A.M., in which no fire was kept; they are extremely interesting, and would be useful if more generally made; the temperature of the interior of houses being of the

greatest importance to the invalid. From these it appears that within doors the air was nearly two degrees ( $1^{\circ}.80$ ) warmer during the winter months than the mean of the external atmosphere. This relative difference of temperature is much influenced, as might be expected, by the prevalence of wind, for we find that, in the comparatively calm months of December and January it is considerable, ( $2.54$ ), while in March it scarcely exceeds half a degree ( $0.58$ .) The air of Torquay is generally drier, and more free from fog than is common to the Devonshire climate; it is also said to be less subject to rain. In 1833 there fell only 35.1 inches, while in Exeter 38.9 were deposited, at Plymouth 40.6, and at Plympton 43.7. Though this is merely the statement of one year, and as such cannot be conclusive, yet it is to a certain extent confirmatory of an impression generally entertained. 143.

The town is chiefly supplied with water from a distance through iron pipes, and is clear and sparkling, with plenty of lime. Hot and cold baths are of easy access; but the accommodations for sea-bathing are not very good.

"Torquay is peculiarly suitable, during the winter, to persons labouring under chest complaints generally. Those far advanced in diseases of the lungs pass their time more easily to themselves, and freer from the harassing effects of cough and febrile irritation; while those in the early threatening of disease, may not unfrequently date a permanent re-establishment of health, to a residence in its mild climate.

#### BABBICOMBE.

This small place, within a short drive to the eastward of Torquay, affords a climate directly its opposite, being open to the north and north-east. Though bleak and cheerless in winter, it forms in summer a most delightful residence; it is situated upon the slope of a steep hill, whose massive rocks, and thickly-planted grounds, constitute a scene as romantic as it is picturesque. This cove is the property of a few persons, who chiefly inhabit it themselves, and consequently affords but little accommodation to strangers. Between Babbicombe and Torbay there is a bone cavern, well worthy the attention of the curious." 145.

#### TEIGNMOUTH.

This place is 15 miles from Exeter, at the mouth of the river Teign, partly on a flat, partly on the sides of high hills, which shelter it on the north. East Teignmouth faces the sea, and is exposed—West Teignmouth is more protected. The beach is open, and there the relaxing heat of summer is much modified. The climate partakes of the general equability of the district—the average temperature being six degrees higher than that of London in winter, and five degrees lower in summer.

"The sea-bathing is good and available at all times of the tide; the sands are perhaps better than on any beach upon the coast. There are hot, cold vapour, and medicated baths, which are conveniently situated, and well appointed. As a place of sojourn for the invalid, Teignmouth can be recommended from the beginning of June to the end of October: it is not so favourable during the remainder of the year, and in the spring is decidedly ill adapted to persons with weakly constitutions." 148.

Take it altogether, Teignmouth forms a pleasant place of residence, and is remarkable for many instances of longevity.

## DAWLISH

is another small and pleasantly situated watering place, about 12 miles from Exeter, in a valley opening to the sea, and protected from the winds. It presents an air of cheerful seclusion and quiet which is very inviting. Although for the most part Dawlish is inhabited by permanent residents, it contains good accommodations for occasional visitants. The sea-bathing here is very good, the sands forming a pleasant footing, and the adjoining cliffs affording adequate shelter from the colder winds. The walks and drives in the neighbourhood are agreeable and accessible. The climate is considerably warmer than that of Exeter, and perhaps of Torquay.

"During the autumn and winter months there can be no place upon this coast better adapted as a residence for those suffering under pulmonary disease, so entirely is it protected from the prevailing winds of these seasons: this is more particularly the case with the little hamlet of Dawlish Water, a spot which has struck me as singularly mild. During the spring months, however, I should be inclined to regard Dawlish as not a very favourable residence, for patients of the above description, chiefly on account of the east winds which then prevail, and to which, from its aspect, it is peculiarly exposed." 150.

## EXMOUTH

is situated about nine miles from Exeter, at the mouth of the river Exe, which extends here to a width of three miles. A portion of the town is built on low ground, while the remainder occupies the summit of a hill facing the sea. The exhalations from the mud are at times exceedingly offensive to the lower town.

"Notwithstanding the south-westerly aspect of Exmouth, it offers a more bracing climate than any of the watering-places here described. It may almost be said to be unsheltered by any immediate neighbouring ground, though to a certain extent the Woodbury Hills protect it from the north." 153.

"From its aspect and open situation, Exmouth presents no great objections as a residence, at any season of the year. It will be found particularly serviceable as a resort for weakly children, and these of a scrofulous constitution, and where change is required in the debility consequent upon attacks of fever, or during convalescence after other diseases: no place upon the coast could be better chosen for these purposes. I should also strongly recommend it in irritable indigestions, catarrhal affections, and more especially in the dry asthma, which experience has often shown to be greatly benefitted by it. Its exposed situation, I cannot but think, renders it injurious in the severer affections of the chest, and particularly in cases where there is a tendency to hæmorrhage or inflammation of the lungs, as also where consumption has been fully developed. To rheumatic complaints it appears particularly inapplicable—those liable to such affections invariably suffer. Female derangements are benefitted by a residence in the higher part of the town, but in the lower there is too great a tendency to produce relaxation." 155.

## SIDMOUTH.

This is the last place mentioned by our author. It is a well-known watering-place, situated about 15 miles to the east of Exeter. It is built on a diluvial deposit of gravel overlying red sandstone. The surrounding hills are about 500 feet above the level of the sea, and shelter the town sufficiently. It is only exposed to the south, which is the sea view. The walks and drives are circumscribed by the steep highlands in the imme-

diate vicinity of the town; but there are pleasant and sheltered walks in the valley.

"Both from its size and climate this place offers an agreeable residence to persons who have lived long in the warmer latitudes; it is well adapted for those labouring under affections of the liver; and during the autumn, winter and spring seasons for the consumptive invalid; indeed, I am inclined to think that during the spring months it is the best place upon the coast for those liable to pulmonary complaints generally; during the summer it cannot be recommended, being then too hot and relaxing." 152.

We have not space to dwell on the long chapter on Geology. Devon, like many other places, presents granite, sandstones of all colours—trap—limestone—grauwacke, &c. &c.—and what is better than all, clouted cream and plenty of cider. We must also pass over the concluding chapter on "Vital Statistics," to which justice could not be done is this article. The work is very creditable to the industry and ability of the author.

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THE SIMPLE TREATMENT OF DISEASE DEDUCED FROM THE METHODS OF EXPECTANCY AND REVULSION. By *James M. Gully, M.D.* Churchill, 1842.

THIS is a very curious and learned work—one half of which is occupied with the opinions and practices of all the principal MEDICI from Hippocrates downwards, as to the methods of expectancy and revulsion in the treatment of diseases. Over this wide field we certainly shall not wade. We think our time may be more usefully employed otherwise. In the third part or chapter, Dr. Gully makes his choice *from* rather than *between* the two rival doctrines above alluded to. Our author offers a few physiological observations on the organs and laws of animals and organic life, which we need not notice here, as they are familiar to every medical man. It appears to be Dr. Gully's conviction that most of our diseases commence in the organs of vegetative life (the digestive organs for example) and thence radiate to the organs of animal life, as the brain, spine and nerves, "But while this fact is undoubted, it is equally certain that disease much more generally begins in the vegetative, and is propagated to the animal organs, than the contrary. Commence where it may, however, the ultimate aim of medical treatment is to preserve the life of the animal." In this sentiment we fully agree—and we believe there would not be found a dissentient voice between the North and South Poles.

But disease may and does begin occasionally in the organs of animal life

"Turning to the instances in which disease commences in the organs of animal life, we find, as might be expected from the preceding details, indications of such more pressing and immediate mischief. For in this case the citadel of man's sentient and percipient being is attacked directly, and, if it be vehemently

assaulted, crushes his vegetative nature in its fall. A strong apoplectic seizure, the effusion of serous fluid on the brain as a consequence of its acute inflammation, the inflammation itself, the concussion of the brain substance by violence or its sudden compression by fracture of the skull, may any of them in a very brief space extinguish both animal and vegetative life. The chronic forms of brain disease tend to the same end, if means are not taken to arrest them : and softening of the cerebral substance, gradual accumulation of fluid, serum, or pus, on its surface or in its cavities, effect as certainly what the acute morbid states above mentioned do with greater rapidity." 99.

Dr. Gully comes to the conclusion "*that no one sinks under disease until it has invaded the viscera of vegetative and animal life.*" Dr. G. acknowledges that this is a trite truth. Macbeth maintained that this aphorism held good *before his day*.

"Time was

That when the brains were out, the man would die."

But, to his astonishment and dismay, he found that Old Duncan was not obedient to this law of Nature! The following quotation will shew our author's drift in the foregoing passage.

"Palpable as this truth may appear, and trite though it be pronounced, the frequency with which it is placed out of view in the treatment of disease, is for that very reason the more astounding. It matters little to a vast number of practitioners where disorder commences, these same viscera, on whose integrity life depends, are made, in every case, the battle-field for the operations of powerful and conflicting agents. Take first the cases of disease wherein the sympathies between the external surface and the contents of the abdomen, and between the latter, are morbidly excited.

Individuals receive wounds on, or are attacked by inflammations, of the limbs, and are said to die of them; the efficient cause of death, mean-time, being the extension of irritative action from the surface to the vegetative viscera, and thence to the brain. Is this fact, constantly and clearly before the mental vision of him who by harsh medication—by large doses of mercurials, drastic purgatives, and stimulants—actually predisposes the viscera to receive the irritation from without? Does it occur to him that the fever which supervenes on some, it may be, slight wound, is in great part attributable to the artificial irritation which his applications to the sentient and highly-sympathising stomach and bowels have produced?

After a longer or shorter period of malaise, a general fever breaks out in an individual, and all the symptoms announce an irritated condition of the vegetative viscera, the tongue, stomach, bowels, kidneys, heart and lungs, being all disordered in function. When to these organs thus situated the same harsh medication is applied, can it be said that the fact that *death comes by the viscera* is duly appreciated? And when, in spite of, or rather in consequence of, such treatment, the brain becomes affected with delirium and then stupor, can any one, having that fact before him, fail to perceive the consequence alluded to?

In truth, the viscera are too often reputed only as vehicles for the reception of medicines and as localities for the erection of revulsive action. Nor is this latter use always an abuse, as I shall have occasion presently to show. But I maintain that in the instances just referred to, and indeed in all cases wherein the sympathies between the external surface and the viscera of vegetative life, and those between these last, are for the time alone involved, the plain and positive indications of nature are in direct opposition to the establishment of any irritation by local means those viscera. These are already in a state of derange-

ment, and should be exempted from agents which further perturb their functions." 103.

Dr. Gully goes on to exemplify these principles. Thus in acute or inflammatory dyspepsia, the symptoms of which we need not describe, our author tells us that the horizontal position and plenty of cold water will cure the disease in two or three days. No aperient medicine need be taken—no leeches applied—no small doses of blue-pill—no counter-irritation, except that of a lavement, are at all necessary.

"Medicine by the mouth is worse than useless in such cases as these: it is positively hurtful. It *relieves* in half the time the above simple treatment requires. The difference is, that the latter *cures*, allows the patient to rise up well, eat his ordinary food, and pursue his ordinary avocations, without the immediate distress, without the certain relapse and consequent necessity for recurrence to the 'blue pill and black draught,' which attend the treatment by drugs." 107.

The treatment of chronic dyspepsia is only a modification of the above. A little more exercise is allowed—"small but frequent draughts of cold water are also highly beneficial, and, conjoined with revulsions on the skin of the abdomen, will generally supersede the use of cathartics."

"Rest of limb is likewise imperative in the majority of cases of this sort, and exertion is found to be very distressing. The sinking and gnawing of the stomach, so usually mistaken for appetite, and appeased by food, will invariably disappear in the recumbent posture, and after a draught of cold water. On the other hand, it comes on when the limbs are employed, especially when the stomach is empty. When, however, the diseased stomach has involved the liver in mischief, and the symptoms denote congestion of that organ, it becomes necessary to expedite the circulation there. This is vulgarly done by mercurials; but a much safer mode is to employ counter-irritating frictions over the region of the liver, and carefully (with reference to the sympathies between the stomach and the seat of voluntary power, the brain and the spinal cord) apportion exercise of the muscles in riding or walking." 110.

We shall only offer one more extract to show our author's horror of all active treatment, even in febrile and inflammatory affections—those of the head excepted.

"With this view of the febrile condition, (and it is one for the reasonableness of which eminent names in medicine might be cited,) the propriety of violent revulsion practised on the organs of vegetative life is, at least, very problematical. The last are labouring to effect relief for themselves by transferring the irritative action to one of the great emunctories, the lower bowel, the kidneys, or the skin,—to the latter in the great majority of cases. How is this to be done whilst means are taken to retain the irritative action in themselves? whilst calomel and antimony are exciting the stomach, and senna, scammony, and other strong purgatives, are drawing blood to the whole canal to supply the enormous excretions they produce? whilst, as if to *force* all the emunctories together, a conflict of diuretics and sudorifics comes to aid the mercurials and purgatives in making 'confusion worse confounded' in the already oppressed and irritated internal organs? It is such treatment as this that justifies the jest passed on medicine in the definition of a physician as one who, armed with certain weapons, lays about him in all directions, with at least an equal chance of extinguishing the patient as the disease. For, although the patient may recover, notwithstanding the tumult into which the viscera have been thrown, the chance is considerably in

These substances having a specific stimulating action on the uterus, it will be obvious that their employment, during pregnancy, even though they may not be pushed far enough to bring on abortion, may prove fatal to the child; and yet some of these substances are frequently recommended during pregnancy for the use of the debilitated mother and her infant; as, for instance, the preparations of iron. The contradiction is but apparent. In this case, in fact, these substances are not recommended to combat the debility of the uterus, and as local stimulants of this organ, but, in consideration of the general debility, as tonics and general stimulants, they being in fact tonics rather than stimulants.

4th. Delibitating substances: these diminish the action of the circulation, and consequently that of most of the great functions of the animal economy. This class includes two orders of substances.

Cooling substances, or temperants: lemon-juice, tartaric acid, vinegar, acidulated fruits, such as oranges, gooseberries, strawberries, cherries, &c. 2nd. vegetable emollients; gum, marsh-mallow, sago, tapioca, rice, barley, sweet-almonds, chocolate, &c.

Emollients from the animal kingdom: veal broth, gelatine, insingham, cow's, asses', and goats' milk, the flesh of young animals.

The frequent use of diuretic medicines must be avoided by a woman in the state of pregnancy, such as squills, foxglove, aconite, colchicum, &c.

There are several of the substances just enumerated, which individually are incapable of injuring; but as they may enter into the diet which some women prescribe to themselves in combination with others of the same class, it was as well to set down as injurious the entire list of these articles, though separately they may be very harmless. Thus, for instance, the diet of a pregnant woman, if exclusively constituted of emollient alimentary substances, may, by depressing the principal functions in the mother, retard the development of the child.

It will be observed that, among debilitants, will be found a considerable number of nutritious and analeptic substances. Such, for instance, are the different fæculæ, gelatine, harts-horn, jelly, &c. These substances, in consequence of their ready assimilation, may constitute a nutritious diet for an enfeebled constitution, which, during convalescence from a disease, requires to recover its strength gradually; but the exclusive use of such aliment would constitute a delibitating regimen for a pregnant woman; who, without having lost any of her strength, requires to augment it in order to share it with the new being, which is being developed within her. There is, however, a period of pregnancy, that of the early months, when the woman must use light food and that of easy digestion, such as fæcula, animal jellies, &c.

After having alluded to the action of medicines on the system of the mother and child, we may observe that iced drinks, whatever be their constitution, cause violent colics and may bring on miscarriage. We shall now make a few remarks on heating drinks and on food of the same quality.

The stimulating action of substances with a strong, penetrating, aromatic odour and with a hot taste, is intense and immediate. The continued use of such meat and drink hurries the circulation, increases the animal heat, agitates the whole nervous system, and thereby disturbs the several

functions; pains are felt in the region of the heart, hæmorrhages follow; and if the fœtus, the victim of these abuses, does not perish, it will carry, from its birth, the germs of constitutional diseases, such as many manifest themselves in a frame prematurely vitiated at the very fountain-head of life. From this it must not be inferred that we are to proscribe from the regimen of a pregnant woman those cordial drinks so often necessary in consequence of the faintings and swoonings to which the pregnant state exposes them. We should even endeavour to prevent their occurrence by the use of generous wine. If the woman is of a delicate organization, or is afraid of giving birth to children that are liable to inherit the feeble constitution of their father, she should make use of tonics during the entire period of her pregnancy. Among the substances endowed with a tonic property, there is none whose powers are better established, or more universally recognised, than iron and its various preparations. A happy application has been made of this substance by M. Colmet-d' Aage, an apothecary in Paris, when he conceived the combination of a powerful ferruginous preparation with an article of ordinary diet so agreeable to the taste as chocolate, so as to produce a medicated aliment easily borne by all stomachs. However it happens that in ferruginous chocolate, the mixture of iron and chocolate retains no trace of the inky and styptic taste of iron, it is a privilege which this preparation enjoys exclusively; it is also that which is most easily given to infants, and for the longest time to adults. This preparation is particularly recommended by the first medical men in Paris to pregnant women, whose capricious stomachs perform their functions so badly, and whose appetite is so often perverted and destroyed.

THE CLIMATE OF THE SOUTH OF DEVON, AND ITS INFLUENCE ON HEALTH. &c. &c. By *Thomas Shapter*, M.D. 8vo. pp. 258. Churchill, London, 1842.

DEVONSHIRE is running a sharp race, in the sanitary course, with Italy—Torquay with Nice—Hastings with Pisa—and Undercliff with the Eternal City itself! The contrast between the bright skies of Italy and foggy atmosphere of England has led more people over the Alps, in search of health, than an accurate investigation of the bills of mortality in both countries would have done. That a climate which consigns a twenty-fifth part of its inhabitants annually to the grave, should be preferred to one where only a fortieth or fiftieth part pay the penalty of Nature, is strange. There is no doubt, however, that certain seasons of a climate generally unfavourable to longevity, may prove salutary in certain complaints and constitutions. Thus a *winter* in Italy may mitigate a pulmonary complaint contracted in England; but it is only in the early stages of such maladies that the mildness of Roman air can at all prove serviceable. If this truth had been well understood, the pyramid of CAIUS CESTIUS would not now



and Egyptians marriages generally took place from the age of 40 to 50 years—probably when their military services were over.

In various works recently published, the period of suckling has been recommended to be prolonged to twelve or fifteen months. In the time of Ambrose Paré, the ladies of the French court nursed their infants from 18 to 20 months. The Koran prescribes two years for suckling. Among the Jews the period of suckling was varied; but it appears that ISAAC was at the breast during two years. Dr. Loudon relates a remarkable story of a lady in Warwickshire, who suckled her child to the age of sixteen years! She was told that this conduct was immoral—she therefore weaned her daughter, who quickly died.

Dr. Loudon himself comes to the following conclusion, as one of the first bases of his "SOLUTION OF THE PROBLEM."

"The period of lactation prescribed by Nature to the human race is *three years*; because it is not till about the end of the third year that the child voluntarily separates itself from the mother's breast."\*

The Doctor modifies a little this startling proposition, by stating his opinion that the mother's milk, and that only, should be the sustenance of the infant till it is 14 months old—that is, until it can sit on its seat, and take food in that position, without danger of suffocation. He has seen two instances of children destroyed even by sucking in the horizontal posture. He denies the validity of the physiological dogma that the appearance of the first teeth is the signal for weaning. It might as well be said that, because a child is born with legs it ought to walk from the day of birth. Both the legs and the teeth require time for consolidation before they are fit for their proper office. From the 14th month till the end of the third year, the nourishment should be partly the milk of the mother, and partly cow's or goat's milk, boiled with farinaceous substances. He recommends vegetable food after the third year, till the period of the second dentition, when animal food may be allowed. "This I take to be the true and natural physiology of infancy." Dr. L. endeavours to support this doctrine by comparative anatomy—but not very satisfactorily, as we imagine. If this doctrine were practically adopted, he thinks the period of marriage might be reduced to 18 or 20, instead of 28 or 30 years, as recommended by Malthus. When we consider the number of deaths which take place among children under three years of age, the average period of lactation would not be much above two years. It may be objected that not one female in ten could bear this protracted lactation. We attach no importance to this objection, as we are convinced that mothers suffer more in their constitutions from large families than from long suckling. It is by no means uncommon among the poor Irish women, who have little else than potatoes to live upon, to see children at the breast till they are 18, 20, or 24 months old. The evils, too, of non-lactation or of early weaning, are not few, leaving aside the almost constant state of pregnancy which results from this practice amongst the rich and luxurious. The poor infants themselves suffer still more than their mothers

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\* P. 126.

by this unnatural procedure, which crams their stomachs with the milk of animals, and with various other aliments that are far worse, inducing rickets, scrofula, hydrocephalus, &c. &c.

Our author is very severe on poor Malthus for overlooking protracted lactation, and substituting protracted celibacy. But it is to be remembered that Malthus was neither physician nor physiologist—and that probably it will require both kinds of checks to prevent superabundant population.

Having now disclosed the grand remedy for the evils which threaten this country in particular, engendered in the brain of our highly-gifted friend, Dr. Loudon, and illustrated, if not corroborated, by reference to various nations at various epochs—to physiology—pathology—morality—religion—and last, not least, political economy—we must take leave of our erudite and ingenious author—most strongly recommending his book to readers of all classes, politics, and religions. We believe there is a great deal of truth, and of sound reasoning, in the proposal of our author—and if this be the case, no class of society has it more in their power to propagate the doctrine than our own faculty. It is true that the practical adoption of Dr. Loudon's scheme would be a “heavy blow and great discouragement” to the accoucheurs; but still we have no doubt that they will prefer the good of the community, and especially of their posterity, to their own interests in this world.

It is evident that, in some countries, as Scotland for example, certain moral checks to redundancy of population, in the shape of prudence and foresight, are powerfully operative. In France, too, “they manage these things better,” for it is well known that the population does not increase half so fast in that country as in England or Ireland. What the *management* on the other side of the Channel is, this deponent saith not.

#### THE SPAS OF HOMBURG. By Sir Alexander Downie, 1842.

THE town of HOMBURG, the capital of a sovereignty, the revenue of which amounts to the enormous sum of 15,000 pounds per annum, lies at the eastern foot of the TAUNUS mountains, so fertile in mineral springs, and at the distance of ten miles from Frankfort. The population of the whole sovereignty is about 24,000 souls. The town is built on the slope of a hill, and the mineral springs rise in the valley below. It boasts a large Cursaal, and numerous shady walks for the benefit of the spa drinkers. In respect to climate, Sir A. Downie asserts that no part of the Taunus, including the Baths of Nassau, can exceed Homburg for salubrity. The exhalations from saline springs impregnate the mountain air, rendering it similar to sea-air at Scarbro' or Brighton.

In the Taunus chain of mountain ten mineral waters enjoy great celebrity, and Homburg, though last not least. The following table, from Sir Alexander Downie, will shew the ingredients in each of the three chief springs of Homburg.

## ANALYTICAL TABLE OF THE SPRINGS OF HOMBURG.

Quantity 16 Ounces.

NAMES.	Badquelle.	Elizabethan Brunnen.	Stahlbrunnen.
Temperature . . . . .	52° Fah.	53° Fah.	53½° Fah.
Carbonic Acid Gas . . . .	22 Cubic Inches.	48½ Cub. Inches.	32 Cubic Inches.
Muriate of Soda . . . . .	108,392	79,154	79,864
— Lime . . . . .	15,285	7,756	10,667
— Magnesia . . . . .	5,904	7,787	5,329
— Potash . . . . .	0,384	—	1,076
Sulphate of Soda . . . . .	—	0,380	—
— Lime . . . . .	0,212	—	—
Carbonate of Lime . . . .	9,698	10,982	7,534
— Magnesia . . . . .	2,485	2,013	—
— Iron . . . . .	0,480	0,460	0,936
Bromate of Magnesia . . .	0,002	—	—
Pure Silica . . . . .	0,164	9,315	0,314
Free Carbonic Acid Gas . .	—	21,486	21,265
Author . . . . .	Mathias.	Liebig.	Liebig

Thus we find that the Badquelle contains no less than 139 grains of solid matters—of which, muriate of soda, or common salt, forms 108 grains in the pint. The first two, Badquelle and Elizabethan, contain nearly half a grain of iron—the Stahlbrunnen nearly a grain. They are all three deficient in the aperient neutral salts—as sulphate of soda or of magnesia.

The Badbrunnen or saline is of a turbid yellowish colour, with a bitterish, salt, or almost styptic taste of the most disagreeable kind. It is only used for baths—the water being raised by pumps and carried in casks to the town. There is but one public bathing establishment, where the common warm, cold, vapour, or shower-bath may be enjoyed.

Near to the Badquelle is the SAUER BRUNNEN, or acidulous spring, very brisk and agreeable to the taste, full of carbonic acid gas, and resembling the celebrated waters of Selters and Fachingen. It is highly valued as a beverage.

Lower down the valley is the Elizabethan Brunnen, whose waters are baled out by a pair of peasant girls. This is strongly impregnated with carbonic acid gas—48 cubic inches to the pint—which covers the bitterish salt taste. The *après gout* is decidedly chalybeate. It forms a refreshing and even luxurious draught in a hot summer morning. It produces a warm glow in the stomach, with feelings of exhilaration. The time for drinking these waters is the same as at other spas—early in the morning. When the bath is judged necessary, eleven o'clock is a good hour. Plain digestible food—roast or boiled beef—mutton—poultry—game—light pudding, are the order of the day here; but pastry, fruit, vegetables, and high-seasoned dishes are prohibited.

The new spring, or STAHLBRUNNEN, is not disagreeable to the taste, though it is difficult to say whether that of salts, iron, or sulphuretted hydrogen prevails, so intimate is the combination, and so influenced by the

carbonic acid gas, with which it is so strongly impregnated. Sir Alex. Downie thinks the water resembles a mixture of Cheltenham, Harrowgate, and Tunbridge Springs, with a stream of carbonic acid gas passed through it. The pint contains 126 grains of solid matter, being little less than that of the Elizabethan or Curbrunnen, as it is commonly called. It contains more iron than any chalybeate in Germany except that of Liebenstein. It is a powerful ferro-saline spring; being both aperient and tonic.

In the following observations of Sir A. Downie, we perfectly agree.

"In describing the mode of action of the water of Homburg on the human system, I beg leave to refer the reader to a larger work,\* in which I have endeavoured to take a general view of this interesting subject, totally overlooked by the majority of writers on mineral waters, or clothed in such mystical language, as to render their views utterly unintelligible. Who, for instance, can comprehend the doctrine of a *peculiar vital principle* in mineral waters, 'communicating,' says Dr. Peez of Wisbaden, 'to the human body either an attractive faculty more consonant with the medicinal component parts of the water, or acting by itself as a healing power upon the diseased organism?' This is, indeed, as Dr. Johnson remarks, a 'good specimen of German ideality and transcendental mystification.' I may be permitted to add, that all that has been produced by the pen of this remarkable author on the subject of mineral waters, and I am not aware that he has ever attempted to publish his peculiar opinions on any other branch of medical science, are involved in what he himself denominates the same 'magic' or mystic 'gloom.' The long and laboured dissertations of the German Spa doctors on crisis and water fever, have also appeared to be more in the light of an attempt to mystify than to illustrate what is in itself both plain and intelligible.

When a mineral water, after being taken for some time, disagrees with the patient, or when, either by the improper use of such water, or it may be some act of imprudence on his own part, a deranged state of the stomach and bowels, with all the concomitant symptoms, is engendered, he is gravely told that he has arrived at the great or little crisis as the case may be—that the water-fever has set in, the mystic change is about to take place, or the *vital principle* in the water has '*stirred up*' his *internal organism*, previous to effecting a complete and radical cure of the malady with which he has been afflicted. What, then, it will be readily asked, is the treatment pursued in such cases? Why, to continue the water; the unhappy victim of *spa quackery* is told that if he will only do so, the vital principle already mentioned will attain the mastery, and that relief will be announced by excessive action of the bowels or kidneys—profuse perspiration or violent retching; that is, nature will effect her own relief. The quantity of undigested mineralised matter which has disordered the stomach and bowels, occasioned nausea, headache, and abdominal distention, accompanied by fever and nervous irritability, will be got rid of by vomiting or purging; otherwise, as not unfrequently happens, the foundation of another disease is laid, or the patient dismissed as incurable, or he may be sent on a journey 'to that unknown land whence no traveller returns.'

This, then, is a crisis, or a water-fever, which a few grains of blue-pill and colocynth would have speedily arrested, and thus have enabled the patient to pursue his course without farther inconvenience, if the water really suited his complaints.

During eight years that I have practised at the German spas, I have not seen

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\* "The Efficacy of Mineral Waters in the Treatment of Chronic Disease, pp. 13—33."

one case of what is called crisis or 'Bad Sturm' (storm). I have frequently known the waters of Wiesbaden and other spas to have been improperly administered. I have also seen many cases in which great constitutional disturbance has been occasioned by imprudence in diet, incautious exposure to cold, and similar accidental causes; but conceiving it my duty in this, as in all other cases, to afford relief to the sufferer as speedily as possible, I have never seen such symptoms as those mentioned by Dr. Richter and others—viz. 'dark-coloured, strongly impregnated urine of a peculiar smell, containing sometimes slimy, unctuous purulent or sandy particles—extremely copious critical alvine evacuations, which sometimes present a cuticular, or slimy, or bloody, or bilious appearance, or take a pitchy or jelly-like consistency, and occur not unfrequently for whole days together—critical secretions through the skin—perspirations of an entirely specific nature, pungent and often offensive in odour, clammy, and sometimes breaking out in particular places, but often over the whole body, &c.'

I have no doubt the learned doctor has seen such symptoms, and so should I, if, on being called to a patient suffering as I have described, I had prescribed a decoction of herbs or more mineral water, or waited, like the German faculty, till nature had exerted her energies to throw off the load of extraneous matter which had impeded her functions. I should not then have been surprised to find the breath, urine, and perspiration tainted, or a quantity of morbid matter evacuated from the bowels; and I should have seen a case of *crisis*, and have subjected my patient to the horrors of a *bad sturm*!!! That there is a point beyond which mineral waters, when indicated, ought not to be continued, I readily admit. This, in the other work already alluded to, I have called the point of *saturation*. I find that Dr. Johnson uses the same term, but if there is any merit of originality in its selection, we both may lay claim to it, since his work was published before mine, but had not reached Frankfort till after mine had gone to press. This point is marked by an increase in all the secretions, which being formerly in an unhealthy state, are, by the action of the water and baths, restored to their normal condition.

Thus, for instance, if, on commencing the waters, the bowels have been obstinately torpid, the skin dry, the urine scanty, the secretions of the mucous membranes imperfect—when, after the waters have been continued for some time, three, four, or six weeks, we find that the bowels are easily stimulated to action by a small quantity of an aperient water—the secretion of the skin excited on the least exertion—the kidneys susceptible of small quantities of liquid, and the secretions of the mucous membranes restored,—the patient has attained the point of saturation; caution must be enjoined, and the waters discontinued. I do not mean to insinuate that these signs must be present; sometimes they appear in a modified degree, and in many cases not at all. Occasionally eruption and hemorrhoids are the result of a course of mineral water, and ought to be regarded as salutary.\*

The Badquelle, as we have seen, contains more than four times the quantity of saline as the Soolen Sprudel at Kissingen; it is therefore almost too powerful even as a bath. This spring is chiefly employed externally in affections of the skin, scrofula, and syphilitic eruptions. Sir Alexander Downie recommends the water to be diluted with an equal quantity of plain water, when it proves irritating to the skin or produces boils there.

"The varieties of cutaneous diseases in which these baths may be employed with advantage are prurigo, porrigo, psoriasis or tetter, and impetigo; in all these

\* Sir A. Downie, p. 47, 51.

cases the Elizabethan Brunnen ought to be taken internally as an auxiliary, the baths being viewed in the light of a primary remedy.

The great advantage of the saline baths of Homburg arises from their employment in conjunction with the internal use of the other spring, in which case we must view the Elizabethan as the primary and the Bad-Quelle as the secondary agent." 53.

The primary effects of the Homburg waters, like those of Kissengen, are aperient, alterative, and tonic. When not sufficiently aperient, some sulphate of magnesia, or what is better, some Pulna water is added. When more tonicity is desired, the New Spring (which is a stronger chalybeate,) may be mixed with it. The waters of this place act on the kidneys, liver, skin, and on the whole of the secreting apparatus and surfaces. When swallowed they produce (as was before observed,) an agreeable feeling of warmth in the stomach, and a pleasing sense of exhilaration. Three beakers usually open the bowels in the course of an hour, unattended with any inconvenience, and their use, even for weeks, is said not to weaken the intestinal canal, unlike many purely saline springs. The kidneys are excited and the appetite is increased. These waters, as well as those of Kissengen, Marienbad, Schwalbach, &c. bear transportation remarkably well, and lose but little of the properties in the transit.

"Let it not be supposed that in these remarks I in any degree advocate the use of mineral waters in acute disease; they are solely applicable to affections of a chronic nature. No one can be more sensible of the value of medicines pharmaceutically prepared in all diseases partaking of an acute character when judiciously administered than I am; but when the malady merges into the chronic form, the continued use of such drugs must prove detrimental to the constitution. The great desideratum, therefore, is to find a substance which will remove discomfort without injury—a safe but efficient remedy, the continued use of which will gradually allay the effects at the same time that it removes the cause. This, I affirm, we have in the mineral waters of Germany when judiciously employed—whether they be drunk at the fountain or imported fresh from the source." 62.

The Homburg waters are to be taken with caution, and under medical advice. In many disorders they will be found hurtful rather than beneficial. They are counter-indicated in all acute, febrile, or inflammatory affections—in tendencies to fulness about the head—in organic diseases of heart, lungs, or rather important viscera—and even in sub-acute inflammation of internal structures.

*"Rheumatism and Gout.*—In the generality of afflictions of this nature, Wiesbaden is decidedly the most efficacious spa in Germany; there are cases, however, in which the internal use of this spa is counter-indicated, and the Elizabethan Brunnen of Homburg may be substituted with advantage.

It is quite a mistake to suppose that when an invalid is ordered to Wiesbaden, it follows as a necessary consequence that he is to drink the water as well as to bathe in it. I have known many disagreeable consequences result from the internal use of these waters in cases where the bath was indicated, and when, if taken alone, or in conjunction with a saline aperient water, it was likely to prove eminently serviceable. This I attribute to the difficulty of digesting the water when much gastric irritability is present, a symptom which frequently accompanies gouty and rheumatic complaints; in all such instances, the Elizabethan

Brunnen of Homburg will be found a valuable auxiliary, in as much as it will produce the desirable effects of regulating the bowels, improving the digestion, correcting acidity, and strengthening the intestinal canal, at the same time that the bath, acting on the skin and muscular system, will reduce enlarged and swollen joints, and gradually restore the impaired powers of locomotion." 70.

In retrocedent and misplaced gout, Sir A. D. thinks the Homburg waters are safer than those of Wiesbaden; "Owing to the tendency which the *latter* have to drive the disease back to the place formerly attacked." We would draw a conclusion the reverse of the author's on this point. As debility is frequently the consequence of even great relief from gout and rheumatism at Wiesbaden, a chalybeate is often recommended as the *NACH KURE*. Sir A. thinks the Homburg waters, as containing tonic with aperient properties, are preferable to Schwalbach.

In hepatic affections, Carlsbad has generally borne off the palm; but our author thinks that had the patients been ordered to Marienbad, Homburg, or Kissengen, waters of a ferro-saline nature, they would have fared better than at the Sprudel.

"Thermal waters are decidedly more difficult of digestion than cold, and when symptoms of gastric dyspepsia accompany affections of the liver, it is evident that any water which will have the effect of superinducing nausea, loss of appetite, heart-burn, and putrescent eructations, cannot be continued with advantage. In torpidity of the liver, whether caused by residence in a tropical climate, intermittent fever, gastro-intestinal inflammation, or abuse of spirituous liquors, I can strongly attest the benefit which may be derived from the judicious employment of the water of Homburg." 75.

DYSPEPSIA is a disease to which the waters of Homburg are well adapted. Female complaints, too, are much benefited by these waters. The accommodations at Homburg, though not equal to those of Wiesbaden or Baden-Baden, are very comfortable and moderate. An omnibus runs daily from Frankfort, in an hour and a half, to the Spa at the trifling expense of ten-pence. It may be reached in four days from London, with ease.

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## Periscope ;

OR,

### CIRCUMSPECTIVE REVIEW.

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"Ore trahit quodcunque potest, atque addit acervo."

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#### Notices of some New Works.

ON THE HYDROPATHIC CURE OF GOUT. By *G. Hume Weatherhead*, M. D.  
Highley, 1942.

Nobody knows better than Dr. Weatherhead that the term "Hydropathic Cure" is a solecism in language—"Water-disease for the Cure of Gout!" The term HYDRO-THERAPEIA has been properly applied to it by some continental writers. In one sense, however, hydropathy is a good term, as the remedy is more likely to produce than remove a disease. We have expressed our opinion so recently on the probable effects and fate of this Germano-mania, that we need not repeat it here; but confine ourselves to the subject of gout, inquiring into the doctrine and practice of our author in this painful and frequent malady.

Dr. Weatherhead acknowledges that the cold-water cure of gout is no new practice. We all remember the doctrine of Kinglake—now completely repudiated by every experienced practitioner in England. We are therefore surprised at the following sentence.

"Though much has been already written against refrigerant applications in the acute stage of the gout, and the minds of patients terrified by the imminent dangers of repulsion, no authentic proof of the fact has yet been adduced."

We have seen more than twenty instances where cold applications to gout in the feet, caused most violent cramps and spasms in the stomach, or such determinations to the head as threatened apoplexy. Dr. W. indeed sets up a man of straw, in the shape of warm wool or flannel—a practice which is rarely employed in *acute gout* (which is the state he is speaking of) by modern practitioners. No one denies that spontaneous retrocessions and transpositions of gout take place—and that frequently; but is that a reason why, by cold applications, we should encourage or actually produce the migrations of the disease? Just the reverse. But let that pass for the present. Dr. W. gives us, in a brief manner, his theory of the nature of gout.

"If we carefully attend to the circumstances under which the disease appears, the ailments by which it is preceded, certain of the symptoms with which it is accompanied, and those which terminate the paroxysm, we shall detect one invariable concomitant of them all, capable, if I be not deceived, of determining both the essential nature of the gout, and the cause producing it, and that is—acidity in some form or other."

Now granting, *argumenti causa*, that in every case of gout there is acidity, both of stomach and urine, it does not necessarily follow that the acidity is the cause of the gout. For one case presenting gout in combination with acidity, there are 99—nay, 599, where these acidities prevail, without any gout at all. What is the cause of the acidity? Imperfect digestion. Then why should not the indigestion give origin to both the gout and the acidity? This is the doctrine held by nine-tenths of experienced practitioners at the present time.



Dr. W. supports his doctrine on the authority of Van Helmont, Berthollet, Murray, Forbes, &c. but, after all, he comes to the very conclusion which all the world has come to before him.

"The source whence the elements of this acidity are derived will be shown more at large hereafter to be the digestive organs. For the present it merely may be observed, that those whom the gout eventually attacks usually have, for a length of time preceding the seizure, suffered from symptoms of indigestion, specially characterised by *acidity* and flatulence."

Thus then Dr. W. and ourselves are almost of the same opinion—except that we consider the acidity as the *effect* of indigestion, without perceiving any proof of its being the *cause* of gout.

We need not describe the symptoms of this rich man's malady; but proceed at once to our author's treatment. We shall not argue the question whether the application of cold water to a gouty limb can or cannot cause its migration to another, and perhaps more important part. Dr. W. says it will not. We say it may—let the practitioner take which of these two opinions he likes best.

We perfectly agree with our author in thinking Dr. Kinglake entirely mistaken in his theory of gout—namely, that it was neither more nor less than common inflammation. We coincide with Dr. W. in looking on the inflammation as specific and constitutional, and that, whatever may be the local means employed, there must be constitutional treatment also. The treatment of Priessnitz, advocated by our author is this:—

"If the patient be comparatively strong he provokes general perspiration by enveloping the body in a woollen blanket, and solicits and encourages the discharge from the skin, by administering water as drink as soon as it is fairly established, and to flow in a more special manner from the parts affected, by wrapping them in the heating bandages. By these means, besides equalizing the circulation, and thus withdrawing the termination of blood to the foot, or where else the disease has its seat, the gouty acrimony is being discharged from the humours by the perspiration. Now, when Priessnitz has continued this process for half an hour or an hour, according to circumstances, he removes the patient, if not too debilitated, either to the cold bath or the douche, or to tepid ablutions simply, if he be much enfeebled. Another advantageous modification is the substitution of perspiring by first wrapping the body in a wet sheet, and then in a blanket: the general application, in fact, to the whole body of the principle on which the heating bandage operates. It is found better to use cold ablutions than the cold bath after the wet sheet. It is necessary to bear in mind that the means of cure require to be moderated, if the patient be unable to leave his bed.

As soon as the patient has undergone the above treatment he is to be rubbed thoroughly dry, to dress quickly, and, *if not incapacitated by pain or weakness*, to take exercise in the open air. The best of all exercises is that of walking, and while doing so the patient is to drink liberally of cold pure spring water."

Now this splashing and ingurgitation of cold water in an attack of acute gout, may do very well for Dr. Weatherhead, the stamina of whose constitution are as strong and unbending as the basaltic pillars of Staffa; but we know, from long experience, personal and otherwise, that, in nine cases out of ten, of confirmed gout, and after the age of 40, this plan would verify the meaning of the word HYDROPATHY, and induce a real, and sometimes fatal "WATER DISEASE."

The practice of plunging into cold water after warm or vapour baths, as a *preventive* of disease, and in sound health, is a very different thing from the same practice in acute inflammations of internal organs—or of specific inflammations externally, as of gout, erysipelas, &c.

And after all, have we not a much safer, and, we will venture to affirm, a much more effectual mode of dispersing the actual paroxysm of gout than this hydro-pathic experiment? We are convinced that we have. It is obvious that the Priessnitz plan embraces no internal remedies, except the ingurgitation of cold

water which, in many cases, would be injurious, if not fatal. Yet the constitutional treatment of this disease is of infinitely more importance than the topical. The safer and best plan is to clear the *primæ viæ* by aperients adapted to the age and strength of the patient, but into which a mercurial should always enter. Thus a calomel and colocynth pill should be followed by saline or senna and saline purgatives till the bowels are well cleared, when salines with colchicum should be administered every four or six hours, with minute doses (say half a grain of calomel and a grain or two of James's powder) of mercurial diaphoretics. This is a safe and efficacious procedure, as far as internal means are concerned, and as compared with the hydromania of Priessnitz. As to the topical remedy, we fearlessly aver, from severe personal sufferings and ample experience, that the tepid evaporating lotions are infinitely more efficacious, and beyond all comparison more safe than the cold sheets, blankets, or towels. Whoever tries the somewhat hazardous experiment of putting a gouty foot or hand into cold water, will hardly forget the stunning, benumbing, and indescribable pain which it produces. After this, the re-action is great, and the heat and pain of the parts are ten times more than before the immersion. Now a tepid lotion, composed of vinegar, spirit, and water, produces a soothing effect from the very first moment of its application, and the subsequent evaporating process carries off the caloric and relieves the pain very much better than the cold water, besides being infinitely safer.

Dr. Weatherhead, who is a clear-headed and learned physician, will do well to ponder on the effect which his adhesion to the Priessnitz empiricism (for as far as the original Peasant is concerned, it is empiricism) will have on the propagation of hydropathy. The disciples of that science (for it lays claim to the title) will hail the advent of a regular physician with great exultation. But let them beware. It is long time since Hudibras exclaimed—

“Ah! me, what perils do environ

The man that meddles with *cold* iron!”

But could some of Kinglake's disciples put a foot out of their graves, they would be apt to warn their survivors against *cold* water in gout, as infinitely more dangerous than cold, or even red-hot iron.

HASTINGS; CONSIDERED AS A RESORT FOR INVALIDS, &c. &c. &c. By James Mackness, M.D. Physician to the Hastings Dispensary. 8vo. Churchill, 1842.

It is a wonder that HASTINGS has not sooner sent forth an account of its salubrious atmosphere in pulmonary complaints. It certainly is not the worst locality in Europe for invalids—and many, who seek the bright skies of fair Italy, would be wiser to plant themselves for the Winter in the neighbourhood of Pelham Crescent.

Dr. Mackness, as physician to a public dispensary in Hastings, had ample opportunities for observing the comparative frequency of particular maladies, and was struck with the comparative *infrequency* of certain destructive diseases that prove the terror of Englishmen.

From statistical facts it was ascertained “that tubercular consumption was far more rare amongst the inhabitants of Hastings than in other places, while several diseases of a contagious character were either extremely rare or altogether absent.” These statistical facts were published in the *Gazette* and *Lancet*, but are now expanded into a small volume for more permanent record.

*Soil and Climate.*—The soil of Hastings is composed of immense beds of sand and sand-rock, with calciferous grit, fuller's earth, slaty clay, and shale

with iron. There is abundant radiation of heat from the light colour of the surface, while the thirsty nature of the soil absorbs all humidity, allowing but little evaporation, and thus preventing dense and cold land-fogs. The sea-fogs, to which Hastings, in common with other parts of the coast, is liable, deposit no dew. In the Summer season invalids are able to go out in a few hours after a heavy fall of rain. The scenery of the cliffs and downs is very beautiful and exhilarating. The geological character of the soil prevents entirely the formation of malaria.

Hastings and St. Leonards are well sheltered, being protected on the North and East by some of the most elevated land in Sussex—the hill of Fairlight being 541 feet above the sea. On the West, too, Hastings is screened by a continuous line of hill rising from 2 to 300 feet above the Channel, to which the town is open on the South. The old part of the town is still better sheltered than the new.

Our author considers it no small recommendation to Hastings that there is, in its vicinity, a chalybeate as powerful, or more so, than Tunbridge Wells. The iron exists in the form of protoxide, and is held in solution by carbonic acid gas. It contains about 4½ grains in the imperial gallon, with 5 of muriate of lime—1½ sulphate of lime—3 sulphate of soda—4 sulphate of magnesia—4 carbonate magnesia—total 23 grains of solid matters in the gallon. There are also 18½ cubic inches of carbonic acid gas—1½ oxygen—5 azotic gas. Thus, it appears that the Hastings spa is richer in iron by nearly one-half, and in respect to carbonic acid gas, it contains double the quantity of Tunbridge Wells. Half-a-pint, twice a day, is the usual dose of the Hastings chalybeate. This water may prove a useful tonic in certain complaints of debility, unattended with any organic disease; but to the great majority of patients resorting to Hastings, as a Winter residence for pulmonary diseases, the chalybeate will be entirely useless.

In the third chapter our author takes up the subject of vital statistics, and publishes a paper from two periodicals illustrative of that point. It appears that the total number of cases entered on the dispensary books of Hastings for twelve years, was 7741, and the deaths in the Borough, from all causes, were 865. In this category there were 161 deaths from consumption—91 among the inhabitants, and 70 among strangers. There were, however, 64 deaths from other affections of the chest—many of which were probably of a phthisical character. The list shows exceedingly few of those diseases which are of miasmatic origin. There were only seven cases of typhus in the dispensary practice—and six deaths from that disease in the whole of Hastings during 12 years.

“According to the report of the registrar-general, the proportion of deaths arising from typhus fever in the whole kingdom, is about one for every sixteen of those who die from other causes; the mortality at Hastings has been only six cases out of 865 deaths, or only in the proportion of one for every 144, so that this fatal and dreadful malady has been nine times less frequent at Hastings than the usual average in other parts of England.”

Upwards of 150 cases of ague have occurred at the dispensary, and the author considers a former state of bad drainage now removed. Cholera did not visit Hastings; but that exemption was participated in by many other watering-places. No death from acute rheumatism has occurred. Longevity is considerable at Hastings. We must pass over the 4th chapter, on CONSUMPTION, as it offers nothing new to the medical reader—nor could it be expected to do so.

The FIFTH chapter treats of those “diseases for which the climate of Hastings is suitable.”

This reminds us very much of those chapters, by the spa-doctors where the spring is represented as THE cure for almost all diseases. Dr. Mackness, however, is very moderate in this respect. His list embraces only the following items, though some of them are very important ones. “Consumption—chronic bronchitis—asthma—neuralgia—rheumatism—gout—scrofula—indigestion—

—atonic dyspepsia—inflammatory dyspepsia—strumous dyspepsia—diseases of children—diseases of the skin, &c.” A short sketch of these complaints, “serving as a guide to the general reader,” follows; but with a wise proviso, that “it is not intended to lead patients to become their own medical advisers.” Of the sincerity of this proviso we have not the smallest doubt.

Our author agrees with Sir James Clark in the following sentiments.

“Judging from my own observation, I should say that the climate of Hastings is unfavourable in nervous headaches, connected with or entirely dependent upon an irritable condition of the digestive organs, and also in cases where a disposition to apoplexy or epilepsy has been manifested, but it will be understood from what has been already stated respecting the topographical relations of Hastings, that this effect of its climate is chiefly experienced in the lower and more confined parts; nor is such an effect peculiar to this place; it is common, I believe, to all places similarly situated. The class of persons alluded to, if induced to reside for any length of time at Hastings, should avoid the more confined situations below the cliff, and rather seek such quarters as are more open and elevated, yet in some degree protected from the north and east winds.”

There are two or three short chapters on locality, dress, exercise, &c. &c., which will prove useful to the invalid, when taking up his winter quarters in Hastings; but which do not require notice in a medical review. Dr. Mackness's little volume will doubtless increase considerably the reputation of this already favourite resort of valetudinarians, and direct thither no small accession of all such visitors as may labour under any of the complaints specified in the *Carte de Maladies*. We beg all such to attend to the hint of our author, viz. “not to become their own medical advisers.”

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THE EVOLUTION OF LIGHT FROM THE LIVING HUMAN SUBJECT. By Sir Henry Marsh, Bart., M.D., President of the King and Queen's College of Physicians, Dublin, &c. &c. &c. Pp. 59. W. Curry & Co. Dublin, 1842.

THE substance of this brochure was read before the College in Dublin, some four years ago, and an abstract of it published in the proceedings of that body. In the present publication Sir Henry has embodied a great deal of research and communications respecting the subject of animal luminescence (if we may use such an expression) as well as that from various inorganic substances. By using the term *phosphorescence*, our author does not pledge himself to prove or even suppose an identity between phosphorous and the luminescence in question.

Sir Henry has collected a great many curious examples of this luminous phenomenon. It has been seen playing in lambent corruscations on the masts and yards of ships, or rendering the ocean a sea of liquid fire. Dr. Lynch, of Galway, witnessed a remarkable example of this phosphorescence, while travelling by night over an extensive peat-bog in Ireland. Cones of intense fire rose in all directions around him, varying from six to thirty feet in diameter, at their base, and rising to thirty feet, more or less, in height. A heavy rain came on, and dispersed these astounding nocturnal fellow-travellers into air—thin air.

The phosphorescence of fishes, when in a state of decomposition, is well known. It ceases when the putrefaction is complete. Equally familiar is the radiation of light from rotten wood, giving rise to strange stories among the young as well as the old inhabitants of rural districts. The luminous exhalations that occasionally rise from burial-grounds, produce still more terror, and have even been pressed into the service of the muse.

"Thy midnight cup is pledged to slaves,  
No genial ties enwreath it,  
The smiling brow, like light on graves,  
Has rank cold hearts beneath it."

Moore.

Living vegetables, as well as living animals, sometimes exhibit this luminescence. Thus several species of the lichens, giving to damp cellars and mines a curious and brilliant appearance. But it is in the ocean, especially in tropical climates, that the most magnificent scenes of marine phosphorescence are witnessed. Sometimes the surface of the sea exhibits a diffused sheet of light—but most commonly the waves sparkle with intermitting and often vivid scintillations; while the track, or wake of the ship presents a long and illuminated *VIA LACTEA*, as far as the eye can reach. The smooth and placid waters of the Mediterranean often present these luminescences as the boats cut their way through the deep, or the oars plunge into the glassy surface.

"Flash'd the dipt oar, and sparkling with the stroke,  
'Around the waves phosphoric brightness broke."

Byron.

But we must leave the immense mass of facts collected by our author on this subject, in order to come at once to the phenomena that gave rise to Sir Henry's paper originally.

About ten days before the death of a lady, the narrator observed an extraordinary light darting about her face and head, flashing like an aurora borealis. She was in the last stage of consumption, and had had, that day, an attack of suffocation which lasted for an hour, and left her very nervous. The narrator watched this luminous phenomenon for some time, when it disappeared. It gave the face an appearance as though it had been painted white and highly glazed. But the light danced about in a very strange manner. Three nights afterwards the narrator sat up again with the young lady, and again observed the luminescence, although there was no candle in the room, nor any moonlight. The patient's sister came into the room and observed it also. It was again seen the night before death took place, but the light was fainter. Her breath had a peculiar smell, which led the observer to think that decomposition was going on.

Sir H. avers that the narrator was a man of clear head, superior observation, and free from superstition. The next instance fell under our author's own observation. A young lady was in the last stage of phthisis like the other, and had read some account of the phenomenon. She was much interested on the topic, and often conversed with Sir Henry about it. About an hour and a half before her death, her sister and some other friends were "struck by a luminous appearance proceeding from her head in a diagonal direction." She was semi-recumbent and tranquil. "The light was pale as the moon." At first it was thought to be lightning, but this was given over. As the light played round the head of the bed, candles were brought in lest the dying person should observe it. This case is not so satisfactory as the first.

The third instance was in that of a man who died of lingering disease in the South of Ireland. "All the witnesses agree in having seen the light; but many of them came to the conclusion that it was caused by supernatural agency." Dr. Donovan, however, visited the cabin where the man lived for 14 nights, and "on three nights only did he witness anything unusual." Once he perceived a kind of luminous fog—and twice he saw scintillations, like the sparkling phosphorescence of the marine infusoria. He seems certain that there was no imposition. The luminescence in question was not seen on the man's person, but over the head of his bed, on a wall composed of clay and mortar. The luminous fogs appeared to pass in streams through the apartment.

We have only space to allude to one more instance, observed by Dr. W. Stokes. There was a poor woman in the Meath Hospital, labouring under enormous cancer of the breast, from all parts of the ulcerated surface of which, a quantity

of luminous fluid constantly distilled. The poor woman remarked that the sore was on fire every night. The light was visible to Dr. Stokes at the distance of 20 feet.

For many ingenious speculations and rational explanations of this curious phenomenon, we must refer to the paper itself, which is clearly an emanation from a classical scholar, experienced physician, and enlightened philosopher.

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DEFORMITIES OF THE SPINE AND CHEST, SUCCESSFULLY TREATED BY EXERCISE ALONE; AND WITHOUT EXTENSION, PRESSURE, OR DIVISION OF MUSCLES. By *Charles H. Rogers-Harrison*, M.R.C.S. Honorary Secretary to the British Medical Association, &c. &c. Illustrated by Drawings. Octavo, pp. 164. London: Churchill, 1842.

Mr. Harrison addresses his work, whose title expresses the principal objects of its author, to the young practitioner and the enlightened general reader.

He sets out by describing the natural structure of the thorax and spine, their bony structure, ligaments, and muscles. From this he passes to the kinds and causes of deviation, on which we have ten chapters. We have gone too far at various times into this subject, to permit us to travel *composito pede* over the ground again. But we may saunter through it, and pick up a flower or some edible root by the way.

Speaking of *slight and temporary deviations*, the result of bad habits, (on which, by the bye, old Monro insisted), Mr. Harrison reprobates go-carts, contrivances for getting rid of children and saving the trouble of teaching them to walk. Children, who cannot stand alone, sustain themselves entirely on the upper rim of these baskets or go-carts by means of their armpits; they are rather more hung up by the armpits than supported by the feet, especially when they are left any length of time, as generally happens. In short all these are execrable contrivances, and perfectly inexcusable where the means for proper nursing are possessed.

After a description of Right Lateral Curvature, Mr. Harrison passes to the examination of its causes. Amongst these, the ever-to-be-execrated stays hold a very prominent place. The profession have uplifted their voices against this abomination in vain. Ladies *will* be in the fashion, *will* look like hour-glasses or wasps, *will* spoil their shapes, and they must do so. But there is some comfort. Happily Mrs. Mills has introduced elastics, and an improved formation of stays, especially the banishment of upright pieces. Yet still, says Mr. Harrison, "the great evil escapes remedy; *all stay-makers leave the stays sufficiently narrow to admit of being drawn far too tight either for health or beauty.* PARENTS SHOULD SEE TO THIS: THE STAY-MAKERS WILL NOT, FOR FEAR OF OFFENDING THEIR YOUNG CUSTOMERS." We would advise parents to lay Mr. Harrison's counsel to heart. Mr. H. advises that the stays of young girls "be freed as much as possible from the stiff pieces of whalebone and the steel plates which give them the appearance of a case of instruments," and that they be formed chiefly of a firm, but elastic, tissue, which by giving a slight support to pendant parts, may yield to all motions without injuring the free development of the breast, and without destroying the muscles that regulate the spine. All this is we think indisputable. Certainly this is a common sense and seems a very fair proposal. Whether the ladies will accept it is another matter. Whatever may be the case after parturition, we think there can be little doubt that, prior to pregnancy, the female figure would generally *look* better without formal stays. At all events they should be of the most elastic and least compressive materials.

Mr. Harrison's opinion of the efficient cause of lateral curvature appears to be

this, that "in most cases of considerable deviation, the curvatures are chiefly produced by the derangement of the muscles and of the intervertebral ligaments." And he seems to think (a fanciful idea) that the reason why the change is not apt to occur at the period of puberty is—the saturation of the organs with fluid and their softness at that time. It seems more likely that, the epoch of maturity being that of rapid growth is necessarily one of weakness, and the spine having to support great superincumbent weight is naturally a part where such weakness would be felt.

In a chapter on the operation of the muscles in the production of spinal curvature, we find a theory proposed which, whether new or not, is new to us, and is not without ingenuity.

Mr. Harrison, after stating that a fixed point is necessary for the action of muscles, proceeds to argue, that while the spine is straight it is flexible, but if bent it becomes firm by reason of the opposition between the elastic power which tends to straighten it, and the power which curves it. The application of this idea to spinal curvature we shall quote.

"In the case of movements of the right arm in a weak individual, such as we have supposed, the curvature of the vertebral column to the left will be readily produced, not only by the muscles which directly move it, but still more by the intercostals, the square muscles of the loins, the broad muscle of the back, the inferior portion of the great pectoral, and even a part of the abdominal muscles. This column being once thus curved, all its upper portion will afford a firm point of support to the muscles, which in their turn must fix the shoulder-blade for the motions of the arm. The left shoulder will be much lowered; the arm of this side will even be pressed against the body; and the right shoulder, slightly raised will be maintained in that state as long as is required for the efforts to be made with the right arm.

"The most common observation bears out this physiological theory of the points of support which the right limb derives from the opposite curvature of the spinal column. The fencing-master on guard, has his spinal column forcibly bent to the left side; the child who attempts to open a door with the right hand, is bent to almost a semi-circle; and the player of tennis, ready to seize the ball which passes with rapidity, waits in that position to secure the precise motion requisite to meet it.

"We must further remark that the precision and exactness of certain delicate movements require as much the upper portion of the spinal columns to be fixed as certain abrupt and powerful motions.

"A young person embroidering at a frame, drawing or writing, is obliged to guard against the vacillation of the spinal column, which would produce that of the arm and hand; and consequently, without bending the whole of the vertebral column, as in cases of energetic action, preserves it curved in its upper part however slightly, a circumstance which soon brings on the inverse curvature of the lumbar region.

"We now see that the bending of the spinal column in the superior part of the dorsal region, which is necessarily accompanied by a difference in the height of the shoulders, instead of being an effect of a vicious habit, is no more than an indispensable condition for the execution of certain actions of the right arm, so that if one asks a weak and delicate person to perform these motions, keeping herself quite straight, he requires of her a thing physically impossible; which explains a circumstance so well known, and so frequently met with by practitioners, that it is often quite impossible, in spite of the most frequently repeated care and remonstrances, to obtain from the most docile and submissive young person, that erectness so desired by mothers. We hear daily the most bitter complaints on this subject, and there are no young and delicate girls who have not frequently been accused of obstinacy or of negligence in this respect.

"We may perceive that it is not absolutely indispensable that the curvature of

the spinal column should take place on the opposite side to the active limb, in order that the stability of which we have spoken may be secured in the exercise of certain precise and minute movements of the upper extremities. This fixedness would also be produced, although with less advantage, by a flexion of the side of the acting limb; and this may be actually observed when the hand acts upon a point placed on a level with the height of the pelvis.

"There are, however, two reasons why curvatures to the left should be less common: the first is that the opposite curvature offers more advantage to the action of the right limb: the second, that the dorsal region of the vertebral column presents early, in all persons, a slight lateral concavity on the left side. It has been seen that this natural or rather general curvature, is to be attributed to the same causes as accidental curvatures, and not, as has been asserted, to the presence of the aorta.

"To sum up these considerations, we conclude that a certain degree of flexion in the upper part of the dorsal region of the spinal column, and more frequently to the right, is with weak patients, an indispensable condition to the stability necessary for the violent motions of the superior extremities, as well as for all motions of the hand requiring exactness and precision, and that the state of curvature, independent of the will of individuals in that situation, must be preserved absolutely during the continuance of these kinds of action."

The extract is a long one, but we could not do justice to the hypothesis by abbreviation. It strikes us that the practical part of the business is plain. Granted that curvature of the spine is a natural attendant on certain muscular actions. That curvature, if persistent or excessive, is a defect, or it may even be disease. The motions, then, that favour its development should be avoided, or they should be neutralised by other motions, or by other means. And this brings us to the every-day practice of combining and regulating muscular exercises in the deformed and in those threatened with deformity.

We think it must be granted that, after all, it is not mere muscular action which causes spinal curvature. Look at the followers of many mechanic arts, exercising muscles very partially—for instance at the fencing-master. Here the spinal muscles may be acting upon one side and the muscles of the shoulder on the other, and yet there is grace, agility, and symmetry.

Distortions are to be looked for in the pale-faced sempstress, the sickly child of the ill-fed artisan, or the delicate victim of education and fashion. The muscles, God knows, are weak enough, but the weakness of the osseous and ligamentous tissues is greater. Fatigue leads to habit—habit to deformity. The curve begun in weakness ends in permanency. Certain muscles may by their action, too, if frequently or long indulged in, affect a skeleton, incompetent to bear its burden, but the fault is really in that skeleton, or rather in that constitutional weakness of which it is only the exponent.

Mr. Harrison devotes a chapter to *Accessory Deviations*, that is, to the Secondary Curvatures consequent upon the first. His explanation of the torsion of the spine which accompanies any important degree of the lateral curvation is possibly correct. He argues that, the erector muscles being fatigued, it becomes necessary to call the accessory muscles into action. As their direction is unfavourable,—

"We are obliged to incline the vertebral column so as to give to the lever for their insertion a shape favourable to their action; and, as the articulating surfaces do not permit the spinal column to bend in a direction completely lateral, the vertebræ perform a rotatory movement from right to left, or from left to right, gliding on one another, which produces the twisting that always accompanies lateral deviations in a way more or less marked."

The transverse process on the side of the convexity is carried backwards, that on the concave side becomes anterior. The torsion of the body may be easily conceived.



"To conceive the cause of this extraordinary mode of derangement, it is necessary to imagine, that in a well-marked curvature of the vertebral column, continuing to sustain the weight of the body, the vertebræ of the middle of that curvature are, in fact, in the same situation as if they were urged by a direct and horizontal force on the side of the concavity, towards that of the convexity. In this impulsion, the body of the vertebra, isolated in its anterior and lateral parts, experiences no resistance: but the articular processes are powerfully restrained by their reciprocal connexion. The transverse processes find, in their articulation with the tuberosity of the ribs, a resistance to their deviation, which would be very weak on the part of an isolated rib, but which becomes considerable by its union with the adjoining ribs."

We are not *quite* satisfied with this explanation, but we do not know that we have any better to offer.

We have a description of the left lateral curvature—of the curvature backwards, observed so commonly in aged country people, particularly in gardeners, and seen, too, in girls who grow quickly and stoop, as in embroidering on very low frames, or in writing at very low tables—of the curvature forwards, generally seen between the 6th and 7th dorsal vertebræ and the third or fourth lumbar. This latter curvature results frequently from the habit which girls have of holding the head very back to produce arching of the figure—it particularly affects children born of ricketty parents; those who are made to walk very early, little girls who are made to wear stays which compress the stomach without descending over the hips, and girls who limp from deficiency in the length of one leg. It is seen, too, in pregnant women towards the close of pregnancy. The projection into the abdominal cavity might injure free development in pregnancy and give rise to an obliquity. It may even interfere with delivery by reducing the space of the pelvis above the sacro-pubian diameter.

The TREATMENT of Spinal Curvature is handled by our author at some length. When bad habits have given rise to the deformity, the substitution of directly opposite habits will, in an early stage be beneficial. Mr. Harrison is severe on "the mere mechanical practitioners," and on extension and pressure of the spine. If there is inflammation or change of structure going on, it is mischievous, if there is not, it is "absurd."

Mr. Harrison, among other arguments against extension, urges that the cervical vertebræ, from their anatomical disposition, are more particularly affected by it, whereas the principal deviation is in the dorsal. He urges also that, "as soon as the column is withdrawn from the action of the extending powers, it will yield to the active effort of the muscles, which first turned it from its natural straightness, and which will now have so much the more power as the column will be less able to resist." Thus, he says, he has "seen a young girl who, after a treatment of ten months had the column perfectly straight when under extension; but when extension was removed, the trunk sunk again, and the deformity appeared greater than before."

"We have also observed," he says, "after two or even three years of treatment, during which the height of the figure had increased considerably, that the upright position could not be maintained without crutches, and on the removal of these supports, the body sank as much or more than before. The crutches, therefore, became thenceforth indispensable."

These are facts, and by facts this question is to be decided. For, after all, a great deal is to be said on both sides, and we confess that in a fair case of spinal curvature unattended with disease of the vertebræ, or with any particular circumstances to contra-indicate the plan, we see no valid physiological reason against judicious extension. Not that we would argue in favour of its violent or indiscriminate employment. But, combined with rest in the horizontal position, and with appropriate exercises, it appears to us, and we rather think that it has proved, either objectionable nor useless.

While we express this moderate opinion in favour of cautious extension, we cannot find terms too strong for denouncing the manner in which it has sometimes been carried into operation, more especially in France. If our author is correct the principle has been inculcated that extension should operate rather by jerks than by a slow and progressive stretching. A more reprehensible doctrine, and more dangerous practice cannot, we think, be conceived, and mischief must inevitably follow its employment. Of this, Mr. Harrison relates one or two striking cases. The recklessness of the means is quite worthy of France, in which the cases occurred.

It must be owned that Mr. Harrison is very hard indeed on "mechanical doctors," and it is odd that as Dr. Harrison was one of the most ardent in favour of extension, Mr. Harrison is as vehement against it. We hope this picture is overcharged:—

"But why talk of principle to mechanists and mechanical doctors? Their principle is to make money; they know no other. Such even is their quickness to seize opportunity, that in France, some have had the idea of strengthening the effect of their machines by religious observances: thus, in an institution in the Faubourg St. Germain, known by the name of the Institution Sacré Cœur de Jésus, they treat hump-back by mechanical beds, to which are added faith, hope, charity, and fastings!"

Mr. Harrison touches on the division of muscles in the treatment of spinal curvature. He is feebly opposed to it. For our own parts, we think this muscle-cutting has been a ridiculous and not very creditable mania of the day. There has been something very like humbug mixed up with it, and it is likely to go out in a stink. Whatever reasonableness there may be in dividing a single straight muscle, in a state of morbid contraction, that can never apply to such complicated muscular apparatus as the spinal, with all its thousand fascicula and more than thousand attachments. The very idea seems to our minds preposterous.

*Rational Treatment* forms the heading and the subject of a Chapter. This consists, according to Mr. Harrison, in watching the figure in early life,—in recommending repose for fatigue and slightly sloping backs for the seats of young ladies—in prescribing healthful games of skipping-rope and so forth—in directing that a bad habit should be counteracted by its contrary—in putting a stop to exercises or pursuits which exercise a bad effect upon the spinal column—in directing gymnastic exercises upon "geometrical data."

First of all, Mr. Harrison insists on a just position of the figure. This he defines to be—"the head raised; the chest expanded; the stomach rather retracted; the back slightly hollowed; the knees well pressed back; the toes turned out, at an angle of not less than  $45^{\circ}$ ; the shoulders kept somewhat back; and the arms hanging easily by the sides, with the elbows turned rather in than out."

Mr. Harrison describes a variety of exercises—comprised in the generic terms extension motions, British Military Club exercise, Indian Club exercise, all described and represented in appropriate and correct costume. Swimming, too, he very properly extols.

For the treatment of dorsal curvature, Mr. Harrison recommends—

1. "Making the patient carry on the arm of the side towards which the body leans, and consequently the side corresponding to the concavity of the curvature, a weight so heavy that not being able to support it long by the mere power of the muscles of the arm, the body may be greatly inclined towards the free side."
2. Raising, with the arm corresponding to the depressed shoulder, a weight suspended to a cord passing over a pulley in the ceiling.
3. Making the hand of the concave side turn a winch with a long handle.
4. Playing at shuttlecock with the left hand.

5. See-saw, the patients standing and holding by two cords fixed to the ceiling. These exercises are best taken without the stays.

*Treatment of Lumbar Curvature*—For young men Mr. Harrison advises fencing with the hand corresponding to the concavity of the *dorsal* curvature.

We have, we believe, communicated to our readers the pith and marrow of a book, not deficient in merit, nor even in originality, on a subject that would seem to be absolutely threadbare.

THE SURGEON'S VADE MECUM. By *Robert Druitt, Esq.* Second Edition.

We are glad to see that this useful little work has arrived at a second edition. As the author justly observes in the preface, short books have generally one of two faults; they are either rendered short by omitting much that is important, in which case they do harm rather than good; or are so condensed as to become most difficult to read, and hard to understand. Mr. Druitt has certainly done his best to avoid both these errors, and has succeeded in a great degree, still, however, it is impossible altogether to escape the latter of the two faults. In consequence of the small space allotted to each subject, no room can of course be afforded for any reasoning upon any point; the bare facts of the case are stated, and these must be learnt by rote by the student who confines his study of the science of surgery to the perusal of this or any similar single work upon the subject. And this is the great objection to this class of books; many students who are desirous of "passing" with as little trouble to themselves as possible, get by heart the contents of one of these small volumes; they are thus able to repeat, parrot-like, the various symptoms, diagnosis, treatment, of any given complaint, but if asked to give their reasons for what they have stated, they are immediately puzzled; it is so, because it is so put down in "Druitt." In what way, then, is such a book useful? Thus: let the student peruse the best works upon each subject, these he will always be able to procure at the library of the hospital to which he belongs; let him then read this book; the principal points, the main facts will be recalled to his mind in the shortest and most succinct manner; and these facts he will be enabled to understand and to reason upon, from his recollections of the larger and more elaborate treatises from which this book is principally compiled.

In justice to Mr. Druitt, we must say that he has rendered this little volume as complete as possible. About one hundred pages have been added to the practical department of the present edition, which contains almost all the novelties of modern surgery, without however introducing too much of the sentimentalism of the present continental practice. The arrangement of the work is also good, and it contains upwards of fifty wood engravings of a superior description, about one half of which are taken from Mr. Liston's work on Surgery, whilst most of the remainder were, we believe, designed expressly for the work.

AN ESSAY ON DIABETES. By *H. Bell, D.M. P. &c.* Translated by *Alfred Markwick*, Member of the Parisian Medical Society. London: Higley, 1842.

The Translator informs us that Dr. Bell has so revised this work on the occasion

of his translating it, as to render it at least a new edition. It originally appeared in the *Dictionnaire des Etudes Médicales*. We cannot pretend to offer a copious account of it, as it is and must necessarily be, in the main, a compilation.

Dr. Bell appears dissatisfied with the ordinary division of Diabetes into *Diabetes Mellitus* and *Diabetes Insipidus*. He prefers distinguishing the various forms by the character of the urine. He admits four species—*Diabetes Mellitus*, *Diabetes with Fatty Matter*, *Ureous Diabetes*, and *Aqueous Diabetes*.

When speaking of the increased specific gravity, so characteristic of Diabetes Mellitus, Dr. Bell praises Baumes' Hydrometer.

"Although the results obtained by this instrument are not perfectly exact, yet they are sufficiently so for all practical purposes. Every 10th of a degree of this hydrometer corresponds to 733 thousandths of a degree of the decimal scale, so that the first degree = 1007.33 and the 6th is nearly equivalent to 1.044."

It certainly is of the first consequence to ascertain the specific gravity of the urine in diabetes, indeed it should not be neglected in any case of disease of the urinary organs.

M. Bouchardat has found that the sugar of diabetes is the same as that of grapes. The occasionally insipid sugar of diabetes is merely a mixture of diabetic sapid sugar with the other elements of urine, such as lactate of urea, lactate of soda, chlorure of sodium, and extractive matter.

Dr. Bell points out the several means that may be resorted to for the detection of sugar in urine. Fermentation with yeast, by means of which one part of sugar in a thousand parts of urine may be rendered manifest, is a delicate, but may be a fallacious one—the polarization of light, rendered evident by an instrument of Biot's, or by a more simple one of Guerard, is another test, difficult, perhaps, of common application—and finally, the *quantity* of sugar is most easily ascertained, though not with absolute precision, by this method:—"The urine is to be evaporated to dryness, the residue is then treated with alcohol, which dissolves the sugar, and all the extractiform substances, soluble in this medium. By evaporating slowly this solution, the sugar crystallizes in small grain-like crystals, similar to the sugar of grapes; sometimes, however, an uncrystallizable syrup is obtained, which appears to be owing to the temperature being too elevated during the operation."

The quantity of *urea* would seem, *consideratis considerandis*, much the same in diabetic as in healthy urine. Generally speaking, it is proportionate to the quantity of nitrogen contained in the food.

*Lithic acid* too may certainly exist in diabetic urine.

Diabetic urine that soon undergoes the vinous fermentation would appear to do so, in consequence of a chyliform fluid which forms in the urine and subsides to its bottom, and acts in the fashion of a ferment.

The presence of *sugar in the blood* of the diabetic is incontestable; the constancy of the occurrence and the amount are undecided.

Dr. Bell, speaking of the *complication* of diabetes, particularly dwells on phthisis pulmonalis. A very common complication it is. Granular diseases of the kidney is not a very rare one. Dropsy, generally a consequence of the latter, not unfrequently closes the scene.

On the *diagnosis* of diabetes we need not dwell, although practitioners of no mean character have made great mistakes. The pathology is very unsatisfactory, no lesions being constant, and a dozen being insisted on by as many observers.

The prognosis is, according to Dr. Bell, and our own experience, decidedly unfavourable. He has no great opinion, nor have we, of the reported cures in journals. These are as plenty as blackberries.

"It is, in general, easy to reduce the quantity of urine nearly to what it is in health, to diminish the hunger and thirst within certain limits, and to do away with the moral dejection and physical weakness; the sweet taste in the urine has then disappeared, and the cure is speedily announced. However, such is not the

case; the urine contains a notable quantity of insipid sugar, its specific gravity is still considerable, and we very soon see the disease return more severe than ever."

With the foregoing statement we quite agree. The *permanent* cures of diabetes are, we fancy, few indeed. The saccharine matter may disappear without a cure. Febrile affections will often lead to the temporary absence of the sugar—so will active purging, or diarrhoea. And in the last stage of the disease the sugar is not evident. This is particularly the case when the pulmonary symptoms become severe.

Of the Etiology, Nature, and Treatment of Diabetes we need not speak. Unfortunately Dr. Bell has been unable to communicate anything new upon these matters. He examines, only to demolish, the various theories that have been promulgated to explain its nature; and he considers an animal food diet, opium, and the warm bath, the best remedies we are acquainted with—sentiments more just than new.

#### *Diabetes with Fatty Matter.*

This next occupies the attention of our author. He quotes cases from various writers. For these we must refer to the work before us, or to *them*. We shall merely extract the following brief directions for distinguishing *chylous urine* from urine rendered turbid by pus, phosphates, or urates.

"Purulent urine, when left to itself, becomes transparent after a time, and deposits a white compact substance, with a well-marked level, which does not mingle with the portion of urine immediately in contact with it. By microscopical examination we are enabled to recognise the presence of characteristic globules of pus. The urine which contains fatty matter does not become transparent when left at rest, neither does it give any deposit, but on its surface is produced a stratum having a creamy aspect; when treated by ether it is rendered completely clear which is not the case with purulent urine.

"Phosphatic urine deposits by rest a whitish matter, but less compact than that produced by purulent urine. This precipitate is immediately dissolved, and the urine rendered perfectly transparent, by the addition of a small quantity of nitric acid. Moreover, by the aid of the microscope, we recognise the crystalline characters of the phosphate of lime, and of the phosphate of ammonia and magnesia.

"Urine loaded with urates is rendered clear by ebullition, and becomes again turbid on cooling. Nitric acid produces a precipitate of uric acid, easily recognised by the microscope."

Diabetes with fatty matter seems rather less severe than diabetes mellitus; it requires much the same sort of treatment.

Some account is given of diabetes with excess of urea, and diabetes insipidus. But we find on these subjects nothing to detain us. On the whole, this little work contains a very good account of diabetes and deserves attentive perusal.

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ON THE DIFFERENT FORMS OF INSANITY, IN RELATION TO JURISPRUDENCE, designed for the use of Persons concerned in Legal Questions regarding Unsoundness of Mind. By *James Cowles Prichard, M.D.* F.R.S. M.R.I.A. &c. &c. 12mo. pp. 243. London: H. Baillière, 219, Regent-street, 1842.

Dr. Prichard informs the reader in an advertisement, that his "design is to convey to persons who either regularly or accidentally are engaged in affairs referring to lunatics, or in trials in which there is question of the sanity or insanity

of individuals, such information respecting the different kinds and modifications of mental unsoundness as it may be required for them to possess, in order that they may be enabled to determine on verdicts, or to direct and instruct juries to that effect." He describes the different kinds of madness as they actually exist: that is, as Dr. Prichard thinks that they exist—and he has (we are sorry for it) invented some new names. This may give some idea of the work.

We shall not pursue our author in detail through his Sections and Chapters, but content ourselves with selecting any statement or opinion for comment or for acquiescence, as the case may be.

The first two Sections are occupied with an examination of the opinions, past and present, of English lawyers on the kinds of mental unsoundness. Dr. Prichard shows that the ancient ideas were absolutely erroneous, and those of the day defective. And this leads him to dispute the existence of "monomania," or at all events, to dispute its frequency. Dr. P. observes:—

"It seems, on the whole, to be the settled doctrine of English courts at present, that there cannot be insanity without delusion, or as it is otherwise expressed by physicians, without illusion or hallucination, that is, without some particular erroneous conviction impressed upon the understanding, the affected person being otherwise in possession of the full and undisturbed use of his mental faculties. This is the doctrine of partial insanity, so that a man is supposed to be mad upon one point, and sane on every other particular; a state in itself most incredible. The existence of partial insanity is only admissible in one point of view; namely in that which was taken by the Lord Chancellor (Lyndhurst,) in commenting on the judgment of Sir John Nicholl. 'It is that the mind is unsound, and not unsound on one point only and sound in all other respects, but that this unsoundness manifests itself principally with reference to some particular object or person.' That this is a correct account of the condition of those who labour under what is termed 'partial insanity' will be made, as I trust, abundantly clear in the following pages, in which it will be shown that the disorder is not of that confined and restricted extent of which it is represented to be, and that mental derangement, in almost every case, not only involves a disordered exercise of the intellectual faculties, but extends even farther than the understanding, and implicates more remarkably the moral affections, the temper, the feelings and propensities; that it affects, in reality, the moral character even more decidedly than the understanding."

We confess that our own observation accords in the main with Dr. Prichard's. We do not remember ever to have seen an instance of what could be considered, *au pied de la lettre*, monomania. There has always, when the patient was narrowly scrutinized, turned up some evidence of eccentricity or perversion of the moral sentiments. At the same time, we can readily conceive, that such a thing as delusion upon one point, independently of any other appreciable derangement, intellectual or moral, might occur. To us this does not seem incredible, for it is only an exaggeration of what avowedly happens.

In the next Section Dr. Prichard enumerates the forms of Insanity—mania—moral insanity—monomania—insane impulse, or instinctive madness—fatuity or mental decay—and idiotism, or original weakness.

The description of *Mania* offers nothing for selection. On *Moral Insanity* Dr. Prichard dwells at some length, the term and the original description of the disease having, it would seem, been his own. The subject is one which is now attracting attention, and deserves the serious consideration of the profession. Dr. Prichard thus defines the disorder.

"Moral insanity is a disorder of which the symptoms are only displayed in the state of the feelings, affections, temper, and in the habits and conduct of the individual, or in the exercise of those mental faculties which are termed the active and moral powers of the mind. There is in this disorder no discoverable illusion or hallucination, or false conviction impressed upon the belief similar to

the delusive or erroneous impressions which characterise monomania. It is often very difficult to pronounce with certainty, as to the presence or absence of moral insanity, or to determine whether the appearances which are supposed to indicate its existence do not proceed from natural peculiarity or eccentricity of character. The existence of moral insanity is palpable and easily recognised only in those instances to which it comes on, as it often does, after some strongly marked disorder affecting the brain and the general state of health, such as a slight attack of paralysis, and when it displays a state of mind strikingly different from the previous, and habitual or natural character of the individual. If a person of quiet and sedate temper, little subject to strong emotions, becomes excitable, violent, impetuous, thoughtless, and extravagant to such a degree as to surprise his friends and relatives, a suspicion is often produced that this change may depend upon a disordered state of mind. There are many individuals who are subject to alternate fits of excitement and depression; the contrast renders the peculiarities of such persons apparent. The fact that they are so affected is always known to their families, but they are not suspected of insanity, unless the affection is very strongly marked."

Dr. Prichard, after relating a case and quoting a passage from a former work, continues:—

"In a state like that above described, many persons have continued for years to be sources of apprehension and solicitude to their friends and relatives; the latter, in many instances, cannot bring themselves to admit the real nature of the case. The individual follows the bent of his own inclinations; he is continually engaging in new pursuits, and soon relinquishing them without any other inducement than mere caprice and fickleness. At length the total perversion of his affections, the dislike, and perhaps, even enmity, manifested towards his dearest friends, excite greater alarm. When it happens that the head of a family labours under this ambiguous modification of insanity, it is sometimes thought necessary from prudential motives, and to prevent absolute ruin from thoughtless and absurd extravagance, or from the results of wild projects and speculations, in the pursuit of which the individual has always a plausible reason to offer for his conduct, to make some attempt with a view to take the management of his affairs out of his hands. The laws have made adequate provision for such contingencies, and the endeavour is often unsuccessful. If the matter is brought before a jury, and the individual gives pertinent replies to the questions that are put to him and displays no particular mental illusion—a feature which is commonly looked upon as essential to madness—it is most probable that the suit will be rejected. Persons labouring under this disorder are capable of reasoning or supporting an argument upon any subject within their sphere of knowledge that may be presented to them; and they often display great ingenuity in giving reasons for the eccentricities of their conduct, and in accounting for, and justifying the state of moral feeling under which they appear to exist. In one sense, indeed, their intellectual faculties may be termed unsound; they think and act under the influence of strongly excited feelings, and persons accounted sane are, under such circumstances, proverbially liable to error, both in judgment and conduct.

Dr. Prichard proceeds to show, that a large proportion of the inmates of lunatic asylums labour under "moral madness" only, and to narrate several interesting cases. These we do not think it requisite to introduce.

The following general remarks comprise the main features of cases of this kind.

1. Great exaltation of animal spirits is the principal feature of many cases. "Such persons are, sometimes, only more cheerful, lively, active, and restless, than their own natural character or disposition. They are fond of society, talkative, full of schemes and projects, never contented to be alone, or in their own domestic circle: form new attachments, and break them continually, and at the

same time have little real affection, especially towards their own relatives. They are thoughtless and extravagant, sometimes generous to excess ; would ruin themselves by making presents, or by mere squandering of money. Some make great purchases of ornaments and trinkets."

Others make great purchases in the way of their business. Such a state of excitement is, in many instances, a permanent consequence of mania.

2. In other cases, excitement alternates with periods of gloom and depression. In some, the periods of excitement are separated by long intervals. Many men, in this state, addict themselves to intoxication. Others, from leading a life of respectability and probity, display a total alteration of character ; the affectionate and constant husband becomes a debauchee—the man of his word a liar—the quiet man a spendthrift and a blackleg—the conscientious man a hypocrite or scoffer. All this may occur spontaneously—or it may follow an injury of the head—or it may appear in families known for madness in their members. And Dr. Prichard thinks that many of the famous characters in history, Christina of Sweden, Paul of Russia, and Frederick the Second of Prussia, &c. have been mad—a sentiment in which he has been forestalled by the poet who has sung :—

"From Macedonia's madman to the Swede."

But these views were not intended to be, nor could they be barren of practical results. If "moral madness" be madness, it must be treated as such. Then come the writ de lunatico, the jury, deprivation of civil rights, and personal restraint. A serious consequence of what usually passes for errors in conduct, for strong passions, or for vicious sentiments ! How then shall this moral madness be defined, how separated from eccentricity, from weakness, from vice, from guilt ? Where, on the one hand, shall free agency be curtailed by law, and criminality be screened from punishment, upon the other ? To us it is palpable that no words, no distinctions, no fine nor coarse definitions will serve. Whatever pains may be taken, whatever subtlety may be employed, it will be impossible to exclude the free agent of sane mind, but of loose principles, from the press of "moral madness," and, if this were acted on, the world would be one great lunatic asylum.

The fact is that whatever may be said of moral insanity, its presence or absence can only be determined by a consideration of the circumstances of the individual case. If the extravagancies of the individual reach a certain point, the common sense of mankind will decide that it is insanity—if they fall short of it, we cannot with a due regard to the interests of society and to personal freedom, pronounce that the law is justified in interfering. This is the view we have always taken of the matter, and we are glad to perceive that Dr. Prichard is substantially of the same opinion. He says :—

"The question which jurors will have to determine is, not whether the person whose case is under examination is afflicted with insanity according to any abstract definition, or general notion, as to the nature of that disease, but whether his mental state is individually such as to render him unfit to be at large, and to be entrusted with the care of himself and his property. It is important to be aware of the fact, that persons may fall into a state that deprives them of this capability, or of the power and inclination to govern their own conduct with propriety and in consistency with their own habitual principles of action, and that through the effect of disease, without displaying that phenomenon which was heretofore considered as essential to madness, and the sole criterion of its existence ; but whether in each particular case, the person afflicted is in such a state as to require legal interference with his personal liberty, and the exercise of civil rights, can only be determined by evidence upon his individual case."

In his Section on *Monomania*, Dr. Prichard reiterates and amplifies the position, to which we have already adverted, that the prevalent idea of its nature is incorrect. Rarely, indeed, if ever, do we see a mind unclouded with one single false notion only. The delusion is generally, according to Dr. Prichard, grafted on



"moral insanity." It constitutes, indeed, the most striking feature of the case, but there has been previously a perversion of the moral character, feelings, affections, and habits of the individual.

"The social affections are either obliterated or perverted; some ruling passion seems to have entire possession of the mind, and the hallucination is in harmony with it, and seems to have had its origin in the intense excitement of the predominant feeling; this is always a selfish desire or apprehension, and the illusory ideas relate to the personal state, and circumstances of the individual. A late French writer, M. Leuret, terms monomania, '*le délire des passions*;' he has given the details of several cases, which strongly exemplify the preceding remark, and which should be read by those who are desirous of studying the nature of monomania.

"The illusions or false impressions of the monomaniac have always, as I have said, reference to himself. They relate, sometimes, to his fortune, rank, personal identity; at others, to his health of body and his sensations. In the former class of cases, the patient feeling himself unhappy, fancies himself in debt, ruined, betrayed; or, being disposed to an opposite state of feelings, possessed of great wealth and affluence, and superior to all mankind: the difference of these impressions seems to depend upon the different state of spirits; the persons affected by the former kind of impressions are those whose minds are predisposed to gloom and forebodings of ill; the latter kind affect the sanguine and excitable."

Illusions and hallucinations are remarkable traits of monomania. The patient believes that he has actual sensation and perception of what does not really exist. M. Esquirol has proved that these erroneous impressions frequently, at all events, take their rise in morbid bodily sensations. One woman fancied that a regiment of soldiers was fighting in her belly, another that the Apostles and Evangelists were quartered there; both had the intestines agglutinated by chronic inflammation. The sense of hearing is most frequently the seat of the illusion.

Dr. Prichard points out the distinction between hallucinations and illusions.

"M. Leuret terms hallucination a mental phenomenon is intermediate between sensation and conception. It corresponds with sensation in the circumstance, that it occasions, like sensation, the belief of the existence of an external operation on the organs of sense and of an external body which acts upon them. In reality hallucination may be supposed, with probability, to depend upon a morbid state of those operations of the brain which in a healthy condition are connected with simple conception and reverie. These operations, which are momentary changes in the condition of the brain, in the usual and healthy state of the system, take place without giving rise to belief in the existence of any past or present cause or external agent. In consequence of the morbid change such actions of the brain are converted into those which produce real perception and actual memory or recollection, so that the person affected is impressed with the belief that he really sees and feels, or remembers as objects of former sensation, what he only conceives or momentarily fancies. But this phenomenon alone would not constitute in man a lunatic. In general the understanding corrects erroneous perceptions, and if the organs of sense are in such a state as to present unreal objects to the mind, reason convinces the individual of the actual condition under which he labours. Ocular spectra and morbid dreams are thus perceived to be what they really are. Cases are on record which answer to this account, as that of Nicolai, who for some days previously to his death saw phantoms which he recognised as existing only in his own perceptions. But if a person believes in the reality or more properly in the externality of a phantom or a ghost-scene, it could not constitute him a madman; and this consideration might have been sufficient to convince our predecessors, that their definition of insanity was founded on mistake."

The fact is, (so it seems to us) that the distinction between sanity and insanity is only a question of degree. The hallucination or illusion, call it which you will be it what is may, reaches a certain point, and we say the man is mad—is

short of that, and we deem him sane. A misanthrope who merely believes that the world is made up of cheats and villains may be thought a clever fellow—push his suspicions of human nature a very little farther, and he is insane on the subject of conspiracy or danger. Dr. Johnson believes in the Cock-lane Ghost and he is deemed merely credulous—another man sees visions or dreams dreams, and he is a lunatic. We may readily conceive a community so far advanced in intelligence as to look upon existing nations with their gross and idle superstitions as no better than Bedlamites.

To return, however, to hallucinations and illusions, we do not perceive that Dr. Prichard has clearly pointed out a distinction between them after all. If it be “illusion” to hear a voice which does not speak, in what does that differ from hallucination, for that “is the belief of the existence of an external operation on the organs of sense and of an external body which acts upon them?” If that be not illusion, then what is illusion?

On *Melancholia*, and on *Instinctive Madness* or the *Uncontrollable Impulse* to *perpetrate crimes*, we need not touch; as species of the latter, Dr. Prichard dwells on the *Homicidal Propensity* or *Phonomania*, on the *Propensity to Arson*, on the *Propensity to Suicide*, and on the *Propensity to Theft*.

Dr. Prichard inquires whether the mere fact of suicide can be deemed of itself to be evidence of insanity. He infers that it cannot, and we must say that we agree with him. He argues:—

“That suicide is not always the result of insanity we must infer from the calm and deliberate manner in which it has been perpetrated. This act has frequently been the result of rational motives, which can well be appreciated by sane persons as not altogether devoid of influence, of motives well weighed, of deliberate, calm determination of the will. It results from a desire, not in itself contrary to nature or reason, to escape from anticipated evils, from the sufferings of life protracted under circumstances which promise only shame or misery and disappointment. This is not the character of the acts of a madman, but rather of a person possessed of reason, though under the influence of despair, of passions habitually ill-regulated, and uncontrolled by a sense of duty and religion.

“The frequent practice of suicide in many countries, where it has been looked upon as in no way culpable or indicative of mental disorder, removes it from the class of those anomalous and unaccountable acts depending on insane impulses. By many of the ancients suicide was rather commended. Pliny terms it the greatest privilege that the gods have left in the power of men amid the calamities of human life. At Ceos, the country of Simonides, it is said to have been a popular maxim that every citizen ought to destroy himself when he attained the age of sixty, and it was supposed shameful to survive the period when a man became unable to serve the commonwealth. Among the ancient Romans, as we learn from Tacitus and other writers, suicide was the general result, among the nobles, of falling into misfortune or public disgrace, or under the displeasure of the Emperor. Among the ancients, suicide was thought by no means criminal, and the sentiment of Socrates, who censured it, is recorded as something novel and remarkable. A similar observation may apply to China in the present day, where a Mandarin, or public officer, who falls into disgrace, scarcely thinks of any other termination of his career. In the Chinese plays, translated long ago and published by Duhalde, the unfortunate actors destroy themselves, as if this was a thing to be regularly expected.”

He brings forward as other instances of the absence of insanity, cases where a father and mother have agreed to murder their child and destroy themselves, and where lovers have deliberately committed self-destruction.

We must confess that, if suicide is to be held to demonstrate insanity, we know not what are the evidences of sanity. A man, unacquainted, perhaps, with Revelation, or an unbeliever in it, is oppressed with the ills of life, or is disgusted with its pleasures, and voluntarily seeks what he conceives a final termi-

nation to them. His reasoning and his act are equally deliberate, and, supposing his premises to be true, cannot be called irrational. Now there are abundance of cases of suicide of this kind, and, in the declining days of Rome, this species of self-destruction obtained throughout the Empire. Nay, it is even possible for a tolerable Christian to commit suicide and to be sane. Misfortunes of the description most intolerable to a sensitive mind oppress or impend over him, he is sensible of the guilt that he incurs, but unable to support the contumely of the world, or the reverse of fortune, he prefers death, and throws himself, however, vainly and wickedly, on the mercy of his God.

We are far from contending that the bulk of cases of suicide in these days are of this description. The infinite majority are the result of insanity, of a mind unhinged by its afflictions or dragged down by bodily disease. And sure we are that, for the interests of society and of humanity, it is better to throw, in almost every instance, the cloak of mental aberration over the unhappy act.

Dr. Prichard devotes a section to the consideration—how far insane persons are irresponsible for crime. The difficulty is to decide to the satisfaction of all, what is or what is not insanity, for, were this attainable, there would be no further difference of sentiment.

Perhaps the leading idea amongst jurists is this: *that a delusion must be proved to exist, and that the criminal act must be clearly connected with it and deduced from it.* Our ancient statute law has indeed gone far beyond this point, and insisted on a complete prostration of reason, as indispensable for a bar to punishment.

The more modern opinion and practice are more merciful as well as more just. Still it must be admitted as medically erroneous, for a man may be insane at the time when he perpetrates a criminal act, although it may be difficult to trace a connexion between it and his delusion, or even to discover a delusion at all. It is "moral madness," the perversion of the moral sentiments and affections, that constitutes the frequent cause of violent and guilty acts, and which may or may not be accompanied by a tangible hallucination.

But if "moral madness" was difficult of determination in cases in which the interests of the individual and his family were alone involved, that difficulty is not diminished where the wider interests of society are implicated. To confine a supposed "moral madman" *might* do him a slight wrong and confer on his family and on society an unquestionable good, for it would remove, at all events, from the sphere of mischief a dangerous or vicious person. But allow this plea of moral madness, so impossible of definition, so hard of discrimination even in the individual case, to form a sufficient and ample defence for the most atrocious acts, and the consequences to society might be destructive. For we must not merely take into consideration the particular crime or the particular individual. The effects of example and of irresponsibility must be looked at, and we must not forget that moral madmen are not altogether so blind to consequences as not to be held in some degree of check by the consciousness that punishment may follow excess. The question is altogether a ticklish one, and we perceive that Dr. Prichard has prudently avoided it.

Each case must still be left to the conflict and caprice of witnesses and counsel, judges and jury. We need not apprehend, at the present time of day, any signal act of inhumanity.

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## Spirit of the Foreign Periodicals.

### DEATH OF M. DOUBLE: HISTORY OF HIS LAST ILLNESS: FUNERAL ORATIONS.

AMONG the losses, which the School of French Medicine has of recent years had cause to deplore, there is perhaps none which will be more generally regretted than that of M. *Double*. He was not, indeed, one of those flashy meteors of the day, which dazzle and entrance, but rather a calm steadily-shining star, which, while it adorns the firmament, does not eclipse its fellows by its brightness. And after all, these are by far the best sort of luminaries. They may not attract the gazing eyes of all the multitude, or be the theme of extravagant but transitory wonderment; but, perhaps, for this very reason, they are the more dear to the quiet student, and it is to them that the mariner not unfrequently looks to guide his path along the mighty deep.

M. *Double*, in a silent and unobtrusive manner, raised himself to the very highest honours which the profession could bestow. He was not an original discoverer; but he knew well, and he knew how to appreciate, all the discoveries of others. He was not a prolific author; but he had carefully studied all the best writers, not only of the present day, but also of bye-gone times. He had drunk deeply at the fountain-head; he was an admirable classical scholar, and had imbued his mind largely with the philosophy of such men as *Hippocrates* and *Sydenham*. Our readers cannot have forgotten the beautiful letter which he addressed, about the commencement of the present year, to M. *Dubois*, on the study of the old authors.\*

It showed the character of the man; from the moment of perusing it we seemed to know him better; and many, we dare say, after reading the extracts which we gave of it, formed the resolution of trying to imitate his good example. We ventured at the time to recommend the more general study of ancient medicine, and every day we ourselves feel more and more the advantage of this pursuit. It may not present to the mind an assemblage of so many facts as the writings of modern times profess to do; but it accustoms it to more philosophic thought, to observe better, to reason better, and therefore to practise better. Remember what a first-rate man—was it not John Hunter?—once said of medical science; “there are more false *facts* than false *theories* in it”—a saying pregnant with the most instructive truth, and the perfect accuracy of which is confirmed by every year’s experience. For what, pray, is the staple of many works of the present day?—often little more than a mere refutation and denial of the statements made by another author the year before. And then again with regard to the *false facts*, may we not say with perfect truth—without accusing any one with wilful misrepresentation—that there are not a few writers in this country, as well as on the Continent, whose personal testimony would be quite insufficient, in itself, to satisfy us of the accuracy of their observations.

It is only by training the mind to habits of calm and comprehensive reasoning, so that it may avoid, on the one hand, hasty and unwarranted conclusions, on the other, a stubborn incredulity, and that it may know how to discriminate right from wrong, truth from error, to sift evidence, to weigh statements, to test discoveries—and all this without resorting to unjustifiable experiments, whether

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\* Vide Medico-Chirurgical Review for April, 1842.

in the way of trying new medicines and methods of treatment on men, or of subjecting any of the lower animals to surgical operations—it is only by such a course of study, we say, that the character of a philosophic physician can be attained to.

Now M. *Double* seems to have been such a man; and, when to high professional distinction is added the still higher praise of integrity and right mindedness in all the relations of life, we have a model before us that all should strive to imitate. We lately gave short biographical sketches of the lives of several other distinguished members of the French school, who have recently died—viz. *Dupuytren*, *Broussais*, and *Richerand*, and we then pointed out what seemed to be the leading defects in the characters of each. All of these men possessed distinguished talents, and succeeded in attracting much public attention during their lives; but not one of them was so fortunate as to win—

“That which should accompany old age,  
As honour, love, obedience, troops of friends,”

—and what was the reason?—simply this—they did not possess that tranquillity of character that can spring only from inward rectitude; they were all of them slaves of some one passion or another, of envy, jealousy, pride or malice.

But we are wandering away from our proper subject, and will now endeavor by selecting a few detached extracts from the contents of the French periodicals to give our readers some idea of M. *Double's* character.

The following sketch of his last illness was read by M. *Amussat*, at the Royal Academy of Medicine.

“On Tuesday, the 7th of June, M. *Double*, although not feeling quite well, and much distressed by the alarming illness of his brother-in-law, attended the sittings of the Academy as usual, and afterwards made several professional visits. In the afternoon, while he was sitting in the Duke of Dalmatia's garden, between the marshal and his lady the *marechale*, he felt so uncomfortable a sensation come over him, that at first he thought of retiring; he strove for some time to master it; but in a few minutes afterwards he fell down upon the ground in a state of complete insensibility.

He, however, quickly recovered, and was then conveyed home; but he positively refused to see any medical friend, and even forbade that his children, who were in the country at the time, should be informed of his illness.

I saw him next day; he was in bed, but quite tranquil and composed; he mentioned every thing that had happened on the preceding day, and expressed his opinion that he would be well again soon, especially if he could induce a crisis either by the kidneys or by the skin. I urged him to see the physician, under whose care, two years before, he had recovered from a severe pneumonia, and pressed upon him the imprudence of prescribing for himself; but all was in vain. I mentioned to him two cases, which I had seen the day before, of pulmonary congestion, where prompt and decided relief was obtained by bleeding; but nothing would make him yield to my wishes.

Next day, when I called, I was told that he did not wish to see any one: his son informed me that he had perspired freely, that the urine was copious, and that he had expectorated several sputa tinged with blood; this symptom, however, he did not seem to think of any consequence.

On the Friday he still declined any visits, and his state, from his son's account, seems to have been nearly the same as before. On the forenoon of the following day, however, I was admitted to see him; he was lying on a sofa in his study, surrounded by his children. He was in an excited state; he spoke in a short hurried manner, and his features were a good deal altered; the pulse was rapid. I was shown a clot of nearly pure blood, which he had just expectorated. I wished much to bleed him, but he still refused, and said that he should have it done the next day, if he was not better. M. *Roux* came in at this

time, and he agreed with me in opinion that the blood came from the parenchyma of the lungs, and that nothing would give so much relief to all his symptoms as venesection.

I saw him again in the afternoon, and found him in nearly the same state; his pulse was still rapid, his tongue harsh and dry, and his articulation somewhat confused. I again urged him to see M. *Andral*; but he still refused.

Next morning he sent for me by seven o'clock to bleed him; he said that he felt a great oppression in his chest, but that he could not say in what point the uneasiness was seated; the pulse at this time was full, large, and beat about 94 in the minute. My wish was that M. *Andral* and myself should have a consultation before any thing was done; but he would not listen to this, and accordingly I bled him without further delay. M. *Andral* called, at my request, in the forenoon, as if *par hazard*, and said to him that he had come, not as a physician, but as a friend to inquire for him: M. *Double* answered at once, 'Je reçois l'ami et le médecin.' He approved of the bleeding—the blood exhibited a decided buffy coat—and advised an emollient enema to be given.

Shortly after M. *Andral's* taking leave, our patient got up, and walked without any assistance to the dining-parlour, where he took a small cup of semolina boiled in milk, and then returned to his bed-room. His children joined him in the course of a few minutes.

They at once observed a marked change in his appearance: his features were much altered, and his ideas were evidently confused. He complained much of thirst, and the calls to pass urine were very frequent—every time that they returned, he got up and walked to an adjoining cabinet in the passage. When I saw him between one and two o'clock, his eyes were fixed, the mouth was deformed, and his speech was difficult and indistinct; he was now so weak that his son and I were obliged to assist him into bed, after passing water in the standing position.

The symptoms became rapidly worse; the breathing being more and more embarrassed, and the expectoration scanty. At seven M. *Andral* was again called, and ordered a blister to be applied on each thigh, a sinapism on the chest, and an antispasmodic draught to be taken frequently; but every thing proved ineffectual, and he expired about eleven o'clock."

As a matter of course, funeral orations were pronounced over the grave of the deceased. M. *Roux*, the well known chief-surgeon of the Hôtel Dieu, was the first to address the audience.

"Since the loss," said he, "which the Academy sustained in the person of the young naturalist, whose early labours promised so rich a harvest, inexorable death had for a considerable time suspended his rigours amongst us. But, alas! what grief and astonishment has this new stroke not produced! This time, the victim has been one of the representatives of that science which examines and aims to apply the various remedies by which man hopes to ward off the ills which Nature inflicts upon him, and whose great object is to prolong the life of himself and fellow-creatures. The colleague, whose mortal remains we have just consigned to the tomb, has been snatched away in the most sudden and unexpected manner, while apparently in perfect health, and when, in full possession of all his moral faculties, and all the activity of his mind, we might have hoped that he would be spared for many years to enrich science with new works, and communicate to the profession which he adorned, the varied results of his immense experience. The elevated character of his mind, the loyalty and genuine nobility of his character, the exquisite perception that he had of every thing lofty, the amenity of his manners, and his invariably dignified behaviour in the exercise of that priesthood to which he had devoted his life, his constancy in friendship, and his ready and generous devotedness on all occasions—combined to constitute one of those moral physiognomies which are as rare as they are truly admirable."

..... "M. Double was born at Verdun (his father was a physician) in 1776. He studied at Montpellier and there took out his doctorate. It was not till 1803 that he fixed himself in Paris, where he was subsequently to rise to such an elevated rank in his profession. He soon distinguished himself by his numerous contributions to a Journal, which was at first called *Recueil Periodique de la Société de Medecine*, and afterwards *Journal Generale de Medecine*,—for the first twenty-five years of the present century the leading medical periodical in Paris—edited by M. Sedillot, one of the young physician's earliest and best friends. M. Double subsequently became editor himself, and for seven or eight years superintended the Journal with great assiduity and success. He must have devoted a very large portion of his time to this task, as most of the reviews of new works, the regular reports of the medical constitution of the metropolis, and many original memoirs on subjects of practical medicine were written by himself.

No doubt it was while engaged in the labours of his editorial duties, that he acquired that vast literary knowledge of his profession, which he afterwards turned to such admirable account in following out its practical duties. He was an excellent scholar; cared little for the ordinary pleasures of the world, and devoted himself almost exclusively to the enjoyment of his library, and the quiet recreation of domestic and friendly life. Be it remembered that M. Double was never attached to any hospital or large public institution; perhaps the attainment of such a situation was not much coveted by him, as his time must have been fully occupied with the labours of his study, and the demands of his gradually increasing private practice. "He was one of those men," adds M. Roux, "unfortunately too rarely met with, who, although ambitious of rising high in his profession, knew how to set bounds to his desires. He became member, and subsequently president of the Academy of Medicine, member also of the Academy of Sciences; the duties of these honorary situations as well as the constant demands of his private 'clientelle,' left him not more than time to devote to his favourite pursuits of literature, and the still more engaging demands of parental instruction. Not many years after his marriage he had the misfortune to lose his beloved companion; subsequently his two children became the chief objects of his unceasing regards; and he had his reward; for seldom have a father's hopes and pride been more amply gratified." .....

..... "M. Double competed for the famous prize offered by Napoleon for the best Essay on Croup; and, although his was not the successful one, it was so fortunate as to receive 'the first honourable mention.' It was published, and is still regarded as a very valuable monograph on the subject. Not long afterwards he brought out his elaborate work on *Semeiology* or the Doctrine of Symptoms as indicative of the nature and probable termination of diseases. It is a work of great compass of thought and observation, and is replete with valuable instruction to the practical physician.

Fortunately for M. Double he was associated with his father-in-law, M. Pelletier—father of the present distinguished chemist of that name—in the examination of the chemical and physiological properties of the vegetable alkaloids. M. Pelletier had succeeded in preparing a considerable quantity of the substance, now so universally known by the name of quinine, and he engaged M. Double to ascertain its remedial virtues, and to determine how far it may be depended upon as a substitute for bark. It is unnecessary to say more upon the subject than merely to state that M. Double's memoirs to the Academy established the efficacy of the alkaloid beyond all doubt, and that the MM. Pelletier have continued ever since to retain their well-deserved reputation for the admirable quality of their preparation." .....

"I could mention," says M. Roux, "many examples to prove the more than ordinary high-mindedness, and strict integrity of character of the man whose friendship I enjoyed for nearly forty years, and whose counsel on almost every occasion I prized so highly. While still a youth, he accompanied his brother—

who, from being the bishop of Tarbes, was obliged to exile himself from France, during the storm of the first revolution, into Spain,—and continued to remain with him in the prison of Figueras, that he might share and relieve his distresses.

We all know the noble part he acted when a peerage was offered to his acceptance;—proud, and justly proud, was he of this intended honour; but ‘never,’ said he, ‘can I accept it on the terms of renouncing that profession to which I have been indebted for every thing I possess.’

Not long before his lamented decease, a body of the electors of his *arrondissement* waited upon him to request his permission to be proposed as the Deputy at the ensuing election. ‘I would gladly accept the honour, if the suffrages of the majority be spontaneously offered to me, and proud should I be of the great mark of my fellow-citizens’ esteem; but I shall never go about soliciting their votes. I know that my saying this is equivalent to my declining the offer; for my mode of acting does not suit the manners of the present time or of this nation.’”

The close of M. Roux’s address was simple and touching—at least, considering the usual style of funeral orations in France.

“Such a man so highly gifted with moral and intellectual endowments, will long be remembered and regretted by all who knew him. Some may be inclined to think, that I have not said enough in his praise, and that I have spoken of his good qualities with too much coldness and reserve: it may be so; for, while addressing you, I could not get rid of the idea that he was standing beside me; and well I know how he disliked to hear any adulation or praise offered to him; he would always reproach those who did so. Would, oh! beloved friend, that my voice could now reach you!—how sweet were our mutual interchanges of thought and feeling!—and what a sad blank has your death for ever caused in my existence! But it cannot be for long that I will have to deplore your loss: a few months—what do I say? perhaps only a few days, or at most, a year or two, and we shall again meet in the eternal mansions. Adieu.”

M. Guérin followed M. Roux, and “saluait l’ombre” of the deceased in rather more ambitious oratory. He spoke of the “grand douleur” in the temples of science, and of the “immense sensation” which the news of M. Double’s death occasioned among all the medical men in Paris, “whom I,” said the speaker, “though sprung but yesterday from the plebeian rank—(is this of science or of parentage?—*Rev.*)—am called upon to represent, and in whose name I now lay upon the tomb their homages and grief and their last adieu.” M. Guérin in his discourse alluded particularly to the extreme quietude, so to speak, of M. Double’s professional career; his name was never brought very conspicuously before the public either as a writer or speaker, and, as we have already mentioned, he was never a physician of any hospital, nor was he distinguished for any brilliant discovery or important scientific work; and yet here is an example, said M. Guérin, of a man raising himself not only to the highest rank in his profession, but admitted a member of the Academy of Sciences, which is well known to be jealous of its diploma except to those who have made themselves famous by their inventions or discoveries. It may be worth while to mention that the rival candidate on this occasion, over whom he succeeded by a few votes, was “le médecin le plus célèbre de l’époque, l’homme qui avait révolutionné la science et répandu son nom d’un bout de l’Europe à l’autre”—can this be aught than poor Broussais whose “decadence” has been nearly as great as his rise. It is certainly creditable to M. Guérin’s candour, who, we need scarcely say, is a mighty admirer of the Napoleon of Medicine, as some of his ultra-admirers have called him, to find that he admits the perfect fairness of the Academy of Sciences when they gave the preference to M. Double. He says: “It was not to any accidental circumstances, to any caprice of chance, or to any merely superior tact, that we can trace the almost constant success which attended his career, and which raised him from the most modest ranks to the



very summit of professional and scientific distinction. Now what was the cause of this? It is perhaps not very easy to designate it in a few words; but there is no reason that we should attribute it to mere good luck or happy fortune. There is an unbroken continuity of success in the career of *M. Double* which must have struck every observer; he triumphed not upon one, but upon all occasions; not only in the Academy of Medicine, but also in the Academy of Sciences; in his profession, and in the daily affairs of life. Was it not to him that the Academy almost always looked in all delicate and difficult circumstances! and who does not remember the courteous dignity with which he uniformly discharged the duties of the president's chair? How often when the over-vivacity or confusion of the members threatened to disturb the deliberations of this 'docte assemblée,' would he with a single word conciliate every difference, restore light where hitherto all was dark, and bring to a close what seemed to be interminable! When the pestilential cholera threatened our shores, it was he that was appointed to determine the value of our resources to oppose its progress; when the judicial courts appealed to the Academy for its opinion in a memorable case involving the responsibility of medical men, it was he who was named to draw up the terms of reply; when Government called upon it to present a plan for the re-organization of the profession, it was *M. Double* again who was entrusted with this important task; and when there was an intention of elevating a physician to the peerage, it was he whom the whole medical corps designated as the most worthy to receive that honour. In his private practice it is well known that he was the intimate confidant of many of the most distinguished men of the day; and no one had ever to regret the unobtrusiveness of his mind to him."

*M. Guerin* is quite right in saying that such eminent distinction as *M. Double* attained to, or that the universal esteem in which he was held by all his equals and rivals, could not possibly be the result of any surprise, or any mere temporary cause. It was the fruit of a long life of high integrity and unwavering consistency. "To a truly elevated spirit, a clear judgment, and a profound experience of men and the world, he added a nobleness of heart, great firmness of character, a well-poised moderation in all his actions, and a deep and sincere love of humanity. He possessed in a remarkable degree a 'veritable *genie de conduite*;' and we need scarcely say, his life was uniformly pure and honourable."

#### M. DUMAS ON THE CHEMISTRY OF ORGANIZED BEINGS.

It appears that *MM. Dumas* and *Boussingault*, in France, have been following out nearly the same pursuits in Organic Chemistry, as Professor *Liebig* has been doing in Germany. It is immaterial to us to whom the priority belongs; the important point for science is, that these gentlemen have arrived at very similar conclusions.

From a recently published memoir of *M. Dumas*, we shall select a few passages that bear more immediately on the physiology of plants and animals.

"We have," says he, "considered *plants* as constituting an immense reducing or decomposing apparatus, that is nourished by carbon, hydrogen, and nitrogen—derived from the decomposition of carbonic acid, water, and oxide of ammonium—and *animals* as furnishing a large consuming apparatus, in which there is constantly going on the combustion of these elements, carbon, hydrogen, and ammonium, to form these very compounds.

We have laid it down as a recognised principle that plants form, or prepare, from mineral substances the organic materials of their composition, that these materials are taken into the bodies of animals, are there subjected to the process

of digestion, thus become animalised, and are subsequently again brought back to a vital process to the state of mineral and inorganised matter.

As accessory results of our researches, we may state that some plants absorb a certain portion of nitrogen from the atmosphere, while others do not; that animal heat is owing solely to respiration; that the chemical process of this function (respiration) takes place not in the lungs but in the capillary vessels of the whole body; that digestion effects two important results, viz. the assimilation of azotised matters, and the restitution of combustible matters to the blood."

M. Dumas then discusses at considerable length the striking effects of ammonia in promoting vegetation; this seems to be the potent agent in most manures. Hence whatever tends to assist the formation of this substance, or to render it more fixed and abiding, is found to increase the valuable properties of manures. The addition of a solution of sulphate of iron, or of weak sulphuric acid, has this effect, and has been found to add greatly to the fertilising properties of these matters. A sulphate of ammonia is formed, and remains fixed; the salt being not volatile like its alkaline basis.

With respect to the much vexed question, as to the source of animal heat, it seems to be the opinion of M. Dumas, that during each act of respiration a certain portion of oxygen is absorbed directly into the blood, and a certain portion of carbonic acid—already formed and existing in the blood—displaced and evolved. There is no direct union or combustion, so to speak, of hydrogen or carbon with oxygen in the lungs, as imagined by Lavoisier and Laplace: the formation of the carbonic acid seems to be a slow and successive act that is constantly going on in the minute blood-vessels; and the venous blood, when it reaches the right side of the heart, is already charged with it, and ready to give it off when exposed to the air in the cells of the lungs.

It is necessary to keep in mind that the production of animal heat, the exhalation of carbonic acid into, and the disappearance of oxygen from, the respired air are three separate phenomena—connected, indeed, the one with the other, but not implying that they are of simultaneous occurrence. Or we may express our meaning in different words thus: the generation of animal heat, the decarbonization, and the subsequent arterialization, of the blood, are three mutually-associated, but not coincident, phenomena. The blood becomes arterialized without any necessary production of heat at the time: and the gradual formation of carbonic acid—an act which is necessarily attended with the evolution of caloric—is going on in every capillary vessel throughout the body.

"Respiration," says our author, "introduces oxygen into the blood and renders it of a bright red colour; carbonic acid is at the same time expelled from it.

*L'oxygene absorbé sert à brûler du lactate de soude, et en general des sels de soude. L'acide lactique transforme celui-ci en lactate et dégage acide carbonique. Cet acide lactique provient des alimens sucrés ou amylacés."*

"The fatty matters also form salts with the soda of the blood. When they are in excess, they become deposited around the vessels through which they have exsuded, and, by being blended with the albuminous fluids in a state of repose, they serve for the production of adipose cellules or vesicles, and the animal becomes fat—in other words, it lays up a supply of combustible matter. When the organised materials of the blood are consumed (brulées) without being replaced, the vital fluid becomes more decidedly alkaline and begins to react upon the adipose vesicles which surround the vessels; the fat and albumen of the cellules is re-dissolved and absorbed by the blood, and the animal becomes emaciated—in other words, it consumes the combustible matter which had been stored up at a former time."

M. Dumas closes his remarks on this subject by pointing out the difference

in the various kinds of food, according to their mode of action on the system and the changes they undergo during digestion and assimilation. He arranges them in three classes:—

1. Aliments of assimilation—viz. fibrine, albumen, and caseum: these are all of a highly azotised nature.

2. Soluble non-azotised aliments of respiration: such as starch, sugar, acid or acidifiable substances, &c., which at once undergo combustion in presence of the soda in the blood;—hence the production of heat manifested from the very commencement of their digestion.

3. Aliments of respiration, insoluble and therefore capable of being stored up in the body, viz. various kinds of fatty matter.”—*Annales de Chimie*.

We may here insert a paragraph or two from M. *Liebig's* lecture on the different kinds of food.

“Another most interesting result of M. *Liebig's* researches is that vegetable albumen, fibrine, and caseine not only have the same properties as the corresponding elements derived from animal matters, but also exhibit their azote and carbon in the same relations to each other. Thus chemical analysis shows us that herbivorous animals find the constituent materials of their blood, their albumen and their fibrine, already prepared in plants; and that the juice of plants, the vegetable albumen, the farina of wheat and of other *cerealia* contain the principle of muscular fibre, while lentiles, peas and beans, contain the same azotised substance, that is present in milk. They (herbivorous animals) live upon the flesh, blood, and cheese supplied them by plants; while, on the other hand, their flesh and blood serve for food to the carnivorous tribe. There is thus a complete identity between the azotised principles existing in vegetables and those in animal substances. Their chemical properties are alike; for we find vegetable albumen, obtained by boiling the juice of plants, and freed from all fatty and colouring matter by means of ether and alcohol, can scarcely be distinguished from the white of eggs.”—*Allgemeine Zeitung*.

#### M. LONGET AND HIS VIVISECTIONS AGAIN!

We observe that the French Academy has again been entertained with an account of some new experiments performed by this dog-killing empiric to ascertain “the influence of the pneumo-gastric nerves on the movements of the stomach.” Have we not known for the last two, or perhaps for the last twenty, centuries, that the nervi vagi preside over the function of digestion, and that wounds or diseases affecting them inevitably bring on some derangement or another of the stomach!; and are not the experiments of *Wilson Philip*, even if we had no others, amply sufficient to satisfy the most sceptical? It would seem not—judging from the recent goings on of M. *Longet* and some others of the experimental gentry of the French school. Indeed we much fear that the poor canine race will continue to be sacrificed year after year by these shallow sciolists, who seem to be utterly ignorant of what has been done before them, and foolishly imagine that it was reserved for them to lay the foundation of physiology. The most lamentable feature of all is, that not a single new truth is ever discovered, or a single acquisition of any importance made to genuine science, after this lavish and most unjustifiable destruction of animal life.

Year after year, nay generation after generation passes away, and, in spite of all the advantages of modern times, the discovery of any new truth in physiological science is, it must be confessed, a phenomenon of exceedingly rare occurrence. This is certainly from no want of zeal or enterprise on the part of its votaries; for never has there been so much officious assiduity among any set of men among the physiologists—more especially those of the French school—of the

present century. Great has been the labour, but little is the harvest to show for it all—or, to use the northern proverb, we may say, it has been “a’ cry, nae woo.” We verily believe that such men as *Bichat* in France and *Hunter* in England knew much more of the laws of animal life, and communicated to their pupils much sounder and more scientific principles than any professor of the present age, notwithstanding the valuable aids which we enjoy from the important discoveries—*real* discoveries these truly are—which have been made since their time in many of the necessary sciences—such as chemistry, botany, comparative anatomy, &c. The cause of this is that we have been on a wrong track almost ever since their days; experiments on living animals have taken the place of studious observations on the phenomena of vitality exhibited by Nature in disease and in health, and of the careful comparison of the forms of organization and the functions displayed in different classes of animals. Until we return to this plan of inquiry, we can expect little more than an ever-renewed succession of fruitless and most cruel operations, and of visionary and absurd speculations. Have we not been told, within the last 20 or 30 years, that the greater portion of the brain may be removed from some animals without much seeming injury to them—that if one portion be irritated the animal runs forward; if another, it runs backward; and if a third, that it pirouettes about or makes somersets in the air—that the optic nerves are not the nerves of vision, and the auditory not those of hearing—that an animal will vomit nearly as well with a wet bladder, secured to its œsophagus and duodenum, as with its natural stomach—that the system of the absorbent vessels is almost an unnecessary and supererogatory appendage to the body, as the veins can perform all their duties quite as well—that the epiglottis is of very little utility, as the act of swallowing and the use of the voice are scarcely, if at all disturbed, if this appendage be cut away? A host of other cases might be alluded to, where the most extravagant absurdities have been gravely proposed and most elaborately discussed both by word and by pen among physicians of all countries. Take, for example, even that much vaunted topic of cardiac physiology—the movements and sounds of the heart. To speak the simple truth, we must confess that we scarcely know a whit more about the subject than when *Laennec* first drew our attention more specially to it. One theory has given way to another, this to be replaced by a third, until a fourth or fifth, equally short-lived, made its appearance. Oh! for one short year of such men as *Harvey*, or *Haller*, or *Hunter*, to set us again in the right path of inquiry, and to dissipate those flimsy clouds—“clouds without water, carried about by the winds”—of modern speculation!

But to return *à nos moutons*, we shall give one short extract from the report of *M. Longet's* memoir, read before the Academy.

“Having laid open upwards of 40 dogs, he ascertained that in the greater number of them the irritation of the pneumo-gastric nerves induced evident contractions of the stomach—which, in many instances, seemed to be as it were strangled round its middle. The degree of this strangulation appeared to be dependent upon the state of the stomach at the time, whether digestion was going on or not. In the former case, irritation of the pneumo-gastric nerves induced very striking contractions of the viscus; but these were less conspicuous when the process had nearly or quite ceased.\* It has been no doubt from neglecting to attend to these circumstances that writers have differed so much among themselves in the results of their experiments upon these nerves, and the conclusions which they have drawn from them.

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\* Very surprising certainly!—just as if we were gravely told that the application of any irritant to the rectum or bladder induced stronger contractions in these viscera during their expulsive efforts than when they were quiescent—rare discovery of *M. Longet*!

M. Longet also ascertained that the effects of irritating the pneumogastric nerves are almost always the more decided and conspicuous, the nearer to the stomach that the irritation is applied.

No contractions or movements of this viscus seemed to be induced by acting, either with mechanical stimuli or with galvanism, on the twigs of the great sympathetic."—*Encyclographie des Sc. Medical.*

We now ask our readers whether we are justified in stigmatising the whole series of M. Longet's inquiries,—to use the elegant language applied by the Member for all Ireland to his old friends the Whigs—as "bloody, base, and brutal."

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#### ON THE MOVEMENTS AND SOUNDS OF THE HEART: REPORT TO THE BRITISH ASSOCIATION, &c.

We do not pretend to understand the meaning of several of the following sentences, but we give them as we find them, without "extenuating or setting down aught in malice." The subject of cardiac acoustics—if we may use such a phrase—is certainly not easily comprehended; and little is the wonder; for at a half-year passes over our heads, but some new theory or another of the sounds of the heart is proposed to replace its predecessor—which, as a matter of course, is judged to be entirely wrong.

"I have been led," says a recent correspondent of the Royal Academy of Medicine, "by the comparative examination of the heart in the human subject and in quadrupeds, and by studying the arrangement of the muscular tissue of the organ itself, to conclude that the heart turns upon itself or rather becomes twisted (*se tordait*) during its systole, and untwisted (*se detordait*) during its diastole. This circumstance I have been able to ascertain, 1, in animals, by exposing the heart and planting in it long needles, which were then observed to describe a quarter of a circle at each contraction; and 2, in the human subject, especially when the person is very lean, and has hypertrophy of the heart, by placing the forefinger of each hand on the precordial region, where the pulsations of the heart are felt; for then the finger that is nearest to the sternum will be observed always to feel the impulsion first.

The movements of the heart consist, 1, of a twisting movement (*mouvement de torsion*) from right to left, of the rising of the apex, at first in the same direction, and afterwards directly from below upwards; 2, of an untwisting (*mouvement de detorsion*) from left to right; and of the falling down of the apex.

The mode in which the ventricular cavities are closed and dilated is much the same as what we observe in twisting and untwisting the finger of a glove, held by its tip, and the aperture of which is kept open by means of a ring: during the *torsion*, this cavity is obstructed; and, on the contrary, during the movement of *detorsion* it is dilated.

The right ventricle, during the act of contraction, rolls over towards the left (*se roule en partie sur le gauche*): both cavities contract at the same time, unless indeed there is any obstruction at the orifice of the aorta or of the pulmonary artery; and then the corresponding ventricle is longer of discharging its contents than the other.

The double sound or tictac of the heart's action seems to be produced by the alternate adhesion and separation of the opposite sides of the ventricular cavities; the first sound being produced by the former and the second by the latter state\*

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\* To prevent the possibility of our mistaking the author's meaning, we give

The cavities of the auricles, being only imperfectly obliterated during their contraction, give rise to a sound so feeble that it can scarcely, if at all, be heard in the state of health; but, in certain cases of disease, it becomes perceptible, and then it is observed to precede the first of the ventricular sounds.—*Gazette Medicale*.

We may as well take this opportunity of making some allusion to the last report, which the committee appointed by the British Association has published a twelve-month or more ago.

The reporter was Dr. *Clendinning*, and he seems to have been the prominent and most active member of the committee. We wish that we could have approved of the general plan and manner in which the inquiry was carried on; but this we cannot do; they savour far too much of the bad spirit of the modern French school,—which may certainly with justice call itself *experimental*, as its votaries seem to do little else but make experiments at the expense of animal life. The series of experiments performed by Dr. *Clendinning* and his associates was carried on at intervals during the years 1839 and 1840: young donkeys were the chief sufferers.

The object of the experiments seems to have been twofold—1, to ascertain the causes of the various abnormal sounds attending the heart's action in disease; and 2, to discover how far the motions and sounds of the heart in the lower animals correspond with those in the human subject.

The first point was *endeavoured* to be solved by attempting to imitate artificially several of the morbid conditions, to which the heart is spontaneously liable, either by the application of stimuli to its surface, so as to excite inflammatory action and its consequences, or by mechanically displacing it, or the large vessels which issue from it, so as to interrupt to a greater or less degree the free circulation of the blood.

For these purposes, a multitude of experiments—many of them cruel, and almost all of them, in our opinion, quite unnecessary—were performed on young asses and other animals. For example, long needles and slender trochars were pushed into the chest in the direction of the heart so as to pierce its substance—"the instrument then exhibited motions corresponding to those of the heart"—and then liquor ammoniæ and other irritating fluids were introduced into the pericardium. The changes in the sounds and movements of the heart were, as a matter of course, most scientifically examined and registered each day, until the poor animal died; and then a regular *inspectio cadaveris* took place, every appearance being duly noted.

We observe, by the bye, that in one of these experiments it is stated that, when the needle was introduced in the direction of the heart for about three inches, "it presented rhythmical movements sternal and dorsal: the latter being slow and forcible, and synchronous with the first sound, and the former being sudden, like a fall-back from gravitation, and accompanying the second sound."

Is not this statement at variance with the generally admitted opinion that the first sound is synchronous with the impulse of the heart, and consequently with its movement forwards or sternal?

In some of the experiments at long curved tenaculum was introduced in the direction of the great vessels, and moved about in different directions, so as sometimes "to draw at the root of the arteries," and then to "relax the hold;"—with the view of ascertaining what changes the cardiac sounds might experience. All this

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the words of the original:—"Les parois internes du cœur s'appliquant avec force les unes contre les autres produisent, au moment où elles se touchent, un bruit qui est le premier temps du tictac normal; lorsqu'elles se separent, un second bruit qui est le deuxième temps."

certainly appears to us to be as rude and coarse a way of investigating the phenomena of life, as can be well imagined. What good can possibly be anticipated from such mechanical manipulations?

Then again what useful inferences can we draw from such an experiment as the following? The animal being pithed, and artificial respiration being kept up, the chest was opened and the heart exposed. "On introducing a finger into the right auriculo-ventricular orifice, the first sound was accompanied with a whiz, and wanted its flapping beginning. The whiz was accompanied by a thrill sensible to the finger. The whiz ceased, and the systolic flap returned on removing the finger."

Again, in some of the experiments, threads were passed through the appendices of the auricles, and being held tense so as to impede the auricular systole, were felt to be drawn downwards with much energy immediately before the systole of the ventricles, auricular contraction being completed, while the ventricles were still developing their systole."

All this, it seems to us, is in the very worst manner of the modern experimental physiologists of the French school.

But our readers—who may not have perused the original communications of Dr. Clendinning—may ask what is "the conclusion of the whole matter," after so much learned labour had been expended. In reference to the cardiac sounds, the chief inference seems to be that the first sound is attributable, "in part, to the abrupt closure and transitory tension of the auriculo-ventricular valves, but chiefly to cardiac muscular tension:"—*tension* is surely not the proper word here; the fibres of a muscle, during its contraction cannot well be said to be *tense*, as they are then rather *shortened* than otherwise. It seems rather strange that no distinct or definite attempt at explanation of the second sound is given. We gather, however, the opinion of Dr. Clendinning on this point—and it is probably the right one—from the last conclusion, which we give entire, for a two-fold reason.

"That the sounds of the heart, like the motions, are governed by the same law in all warm-blooded animals hitherto examined, and probably in all kinds whatsoever.—viz. that the *first* sound in all animals is longer and obtuser, and the *second* sound shorter and sharper; that these sounds are, as in the human heart, respectively systolic and diastolic; that their causation likewise follows the same law as those of man, the *first* sound being mainly muscular, and the *second* exclusively valvular—(the closure, we suppose, of the semilunar valves);—likewise that there is the same causation and mutual relation of the cardiac and arterial pulsations."

There seems to be scarcely a single point in the physiology of the heart's action that has not been, and alas! still remains, a subject of difference of opinion. For example, medical men are not agreed among themselves whether the movements of the auricles and ventricles strictly alternate with each other, or whether they are continuous and immediately successive; whether the systole of the auricles contributes to the propulsion of the blood; whether the elongation and shortening of the ventricles occur during their systole or their diastole; what is the cause of the pulsation or impulse of the heart against the side; whether there is any power of suction exercised by the cardiac cavities, during their diastole, on the blood contained within the large veins; whether the systole of the auricles is attended with any perceptible sound; and, lastly, what is the cause of the double sound of the healthy heart—not to mention the various abnormal sounds which are induced by the existence of various diseases!

We believe that our brethren of the long robe congratulate themselves occasionally by toasting "the glorious uncertainty of the law." We much fear that theirs is not the only profession to which "uncertainty" belongs—with ours, however, it is any thing but "glorious." And yet it is not so much to the very nature of our pursuits, as it is to the mode of our following them out,

that the humiliating unstableness of many branches of medical science is to be traced. We medical men must be taught the elements of sounder logic, and learn to exercise a little more of that rather rare endowment "common sense," before we can hope to make many steps in advance. Certainly it is not by merely laying bare "the bloody house of life," and rudely looking at its moving machinery, that we shall ever fathom its higher mysteries. We verily believe that there is a curse on the wilful sacrifice of animal life, except for the purposes of food to mankind. "Every moving thing that liveth shall be meat for you,"—this is sufficiently explicit; but where is the warrant to kill for the sake of science?—(Rev.)

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#### INFLUENCE OF TOBACCO ON PHTHISIS.

*"To the Editor of the Gazette Medicale."*

Sir,

In 1836, I published a paper on the influence of tobacco on the health of the workmen in the Royal Manufactories. I there put forth the following statement: "Pulmonary consumption is rare among the workmen, who are engaged from their youth in the manipulation of tobacco; moreover, this disease makes much less rapid progress than it does usually in those who may happen to have the germ of it already developed when they enter the workshops." My experience during the last six years has amply confirmed the accuracy of this statement, and, thanks to the improved organization of the medical service in the Royal Manufactories, I am now able to collect materials more easily than hitherto. My only motive, at present, is to direct the attention of medical men in general to the circumstance now mentioned, and to solicit them to examine the question for themselves.

MAURICE RUEF.

Strasbourg, 31st May, 1842.

(The hint is a good one: the soothing effects of tobacco-smoking, where it does agree, may be really very useful in cases of incipient or threatened phthisis.—(Rev.)

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#### HISTORY OF AN EPIDEMIC MENINGITIS; FOLLOWED BY COMMENTS ON FRENCH MEDICINE.

M. Forget, Professor of Medicine in the School at Strasbourg, has written a series of papers in the French Medical Gazette, on a peculiar epidemic disease which prevailed during the course of last year in that city. These papers are so elaborately minute, that we find considerable difficulty in giving the "pith and vital sap" of them—for this is all that we aim to do—they are so overlaid with wordy details, thick and frequent as the leaves in Vallombrosa.

We pass over, therefore, his prefatory remarks on the importance of medical speculations, the uncertainty of medical nomenclature, the difficulty of many medical inquiries, and so forth.

One of his objects seems to be an endeavour to show that there is nothing necessarily peculiar or specific in a disease from the mere circumstance of its being epidemic—i. e. wide-spread over a greater or less extent of population;—that it still remains essentially the same malady, requiring the same mode of treatment, as when it occurs sporadically and in isolated cases. He alludes to the sad and flagrant errors into which most medical men are apt to fall upon the apparition of any novel epidemic. "Witness," says he, "the lamentable mistakes they committed, when alarmed and bewildered by the invasion of



the oriental cholera, and the truly *bizarre* notions that have been entertained on the subject of the *grippe* (the influenza)—and yet what has been the result of our experience of these two epidemics? neither more nor less than that the same treatment, to which we trust in cases of sporadic cholera and bronchitis, is applicable to them."

Now this, like almost every other sweeping and wide-embracing assertion in medicine, is partly true and partly untrue. We *do* say that whenever a disease becomes decidedly and extensively epidemic—be it the influenza or the cholera, or typhus fever, &c.—its *type* (to use an old medical term), or prevailing character will be found to be really and intrinsically more or less modified. Has it not been observed, as a very general fact, that cases of the genuine epidemic influenza will not stand bleeding and other lowering remedies so well as those of simple and occasional catarrh? and where is the medical man that will be so bold as to assert that the treatment of the pestilential cholera is similar to, but only more energetic, than that of ordinary Summer purging and vomiting? Not many will go so far: the latter is a local, the former is a universal systemic, disease; the latter is the result of an overflow or an acrid state of the bile and other intestinal secretions, the former is the result of a poisoning and vitiating of the blood and all the humours; the one belongs to the class of *profluvia*, the other is essentially a pestilential and malignant fever. But it is unnecessary to pursue this subject any further; our only object in these passing remarks being to guard any of our readers against too readily admitting what are called "general principles" in medicine. It has been from the neglect of this caution that the French school in particular has, especially during the present century, fallen into a succession of the most fallacious errors in the treatment of diseases.

But to come to the immediate subject of our inquiry—the epidemic meningitis of Strasbourg—we are told by M. *Forget*, that in the latter months of the year 1840, several cases of severe encephalic disorder were observed in the military hospital of that city; but that it was not until the last week or two of the year that their number became so rapidly frequent as to excite marked attention. From this time to the beginning of May in the following year, the epidemic seems to have continued; although during this time several distinct remissions or periods of abatement were observed. Confined at first to a single regiment, it soon attacked the other corps of the garrison, decimating the soldiers, but generally sparing the officers.

It had existed for a considerable period among the troops in the garrison, before the inhabitants of the city became affected; and it was therefore for some time imagined that the diet of the soldiers might have something to do with it: its subsequent progress, however, quite contradicted this idea. The weather, too, seems to have had comparatively very little influence either on its development or its career: it made its first appearance in Winter—whereas ordinary encephalitis is much more frequent in hot than in cold weather—and continued throughout the subsequent Spring to nearly the middle of Summer. M. *Forget* admits that, after the most patient examination of the subject, he could not trace the disease to any of the usual exciting causes of inflammatory action, such as exposure to cold and wet, irregularities of diet, &c. &c., and that he is therefore obliged to infer that it, like influenza, cholera, and other epidemics, must be referred to some specific, although unknown, conditions of the atmosphere. While thus admitting the atmospheric origin of the disease, he does not believe in its contagiousness, or direct communicability from one sick person to another. None of the nurses, or even of the other patients in the hospital, seemed ever to catch the disease from any patient, who was admitted while labouring under it.

(Upon the whole, this seems to be generally the case with most regular epidemics; as for example cholera, influenza, erysipelas, &c. It is rarely, if ever that

we meet with a case of such diseases, where we can unhesitatingly pronounce that it has been transmitted from one person to another. That however the bodies of patients labouring under them may emit effluvia which, under certain—although to us unknown—conditions of the air will favour the development of the same disease in the attendants, seem to us to be quite warranted by the results of experience, and to be in strict harmony with the history of the genuine contagious diseases. As, in most matters connected with medical science, the truth here seems to be in the *juste milieu*, equally retired from the extremes of an over-ready credulity, that willingly adopts any view of the subject which saves the trouble of much inquiry or discussion, and of a cold rigid scepticism, which will admit nothing but what can be made a matter of sensual proof.)

It is not very easy to make out exactly what are really the opinions of M. Forget on some points. While he tells us that the epidemic encephalitis, of which he is treating, has this peculiarity, that its inducing causes are certainly not those of the ordinary spasmodic form of the disease, he follows up this statement by saying that he nevertheless sees no reason why they should not be regarded exactly in the same light and treated altogether in the same manner. His reasoning will be seen from the following passage:—

“No doubt the existing cause of the disease is strange; but is this any reason for supposing that it produces a *specific* affection? Does pneumonia from the inhalation of an irritating gas differ in any respect from pneumonia induced by other causes? Admitting—and remember that we are completely ignorant of the subject—that the cause is entirely different from the ordinary exciting causes of the disease, does it follow from this that it shall necessarily give rise to unusual and strange results?”

We (Rev.) have already, in some of the preceding remarks, expressed our opinion, which differs certainly very materially from that expressed by M. Forget. He believes that the ætiology of a disease, or the mode in which it has been generated and developed, has very little influence on its type or character, and that it need therefore scarcely be taken into account in determining our plan of treatment. Here we are at issue with him. We think that the type, and therefore the *ratio medendi* also of a disease are greatly influenced by the cause which has given rise to it—and more especially whether this be epidemic and *seasonal*, or whether it be merely casual and sporadic. As a general remark, we should say that diseases, when decidedly epidemic, very usually induce a greater degree of debility and prostration of the entire system, than when they are sporadic. Is not this the case with genuine influenza, when compared with casual bronchitis? and with epidemic compared with casual erysipelas? Even with respect to those diseases which are decidedly contagious, as well as generally epidemic, the same remark usually holds true. A casual sporadic case of small-pox, or of measles, is generally of a more phlogistic type than the average number of cases during an epidemic prevalence of the disease. But even in the case of sporadic diseases we contend that their type is often very much modified by the course which has produced them. To take the very example which M. Forget adduces, viz.: pneumonia when induced by the inhalation of an irritating gas, and pneumonia supervening upon exposure to wet and cold. It may be necessary to premise that, in our opinion, almost every case of ordinary genuine inflammation, more especially when any important organ is affected, is preceded for several days or even weeks by a state, so to speak, of *incubation*, in which the blood is undergoing certain changes, which lay the foundation for the explosion of the disease. It seems to us to be a great mistake to suppose—although the idea is a very common one—that attacks of pneumonia, pleuritis, rheumatism or peritonitis are often very sudden in their occurrence, and that they supervene in the course of a few hours after a sudden chill of the body. This is a very general supposition among unprofessional folks; and even not a few medical men also allow themselves to be carried away with it. And yet experience certainly does not

warrant it. In ten cases out of a dozen, it will be found that the patient has been more or less indisposed—"out of sorts"—for a week or two probably, or it may be longer, before the inflammatory attack came on. There has been a certain degree of feverish state of the system, not sufficient perhaps to make the person keep the house, but which had shown itself by tolerably obvious symptoms—such as loss or irregularity of appetite, more thirst than usual, lassitude and inaptitude for ordinary bodily and mental exertion, disturbed sleep, probably headache, along with constipated bowels (generally) and deep-coloured scanty urine (always.) Now it is during this state—which may be called the period of *incubation*—that the blood is gradually undergoing those preliminary changes which precede the explosion of the inflammatory attack. In what other way can we reasonably account for those characteristic deviations in the condition of the blood from the standard of health which exists in all genuine phlegmasiæ? These cannot surely be the work of a few hours—at least we should think not;—although we know that the whole mass of the circulating fluids may undergo very striking changes in a very short space of time from the introduction of certain poisonous matters. But the two cases, it will be observed, are not strictly parallel; in the one—that of the phlegmasiæ,—the relative proportions of the solid and fluid elements of the blood is decidedly altered; whereas, in the other—that of poisoning—it seems to be rather the mode of their admixture or combination that is vitiated.

Well now, supposing that our readers agree with us in these views, they will at once perceive the grounds on which we impugn M. *Forget's* assertion that the type and therefore the treatment of a disease are not necessarily affected by the cause which may have induced it—that, for example, pneumonia (or rather bronchitis) caused by the inhalation of an irritating gas is in every respect the same disease as when it occurs in the usual way. The truth of the assertion is moreover contradicted by the results of practice. It may be laid down as a rule of very general application that all suddenly-induced inflammatory diseases will not bear large depletion so well—or at least that the system suffers more therefrom—as those which are developed spontaneously. The reason is obvious;—not to allude to other circumstances, the blood is more or less altered in the one case, and it can scarcely be so in the other. Besides, in the case of an inflammation induced by the direct agency of any acrid application, we should remember that the primary action must be on the nerves of the part, and that the subsequent vascular disease must be, in a greater or less degree, the result of this. Such, however, is not the case with ordinary spontaneous phlegmasiæ.

We therefore repeat that M. *Forget* is, it seems to us, quite in error when he supposes that the character of a disease is not influenced by the cause which produced it. If our view be correct, we need scarcely say more as to the great practical blunder of teaching that the treatment of a disease, when it prevails as an epidemic, is necessarily the same as when it occurs in isolated and sporadic cases.

But a truce to this digression. We must now proceed to give an abstract of our author's observations on the prominent features of the epidemic meningitis, which he has so elaborately described.

*Symptoms.*—The earliest and most striking symptom, as may be supposed, was severe headache. The character of the pain varied much in different cases; being sometimes lancinating, pulsatory, boring or constricting; at other times subsiding every now and then a minute, and then recurring with increased intensity, almost like the blows of a hammer, or as if a nail were driven into the brain. In some cases the headache was the only well-marked symptom up to the time of death; but this was certainly not often the case; for usually it subsided in the progress of the disease, and delirium or coma supervened for some time before the fatal termination.

Rachialgia was the next most common symptom; and as it is not so frequent and 'banal' in a variety of complaints as headache, M. *Forget* regards it as "un signe pathognomonique de notre epidemie." The pain was sometimes along the whole spine; but in every case was much more severe over the nape of the neck than elsewhere. Often it was so acute that the patient lay in a state of almost tetanic rigidity, from fear of aggravating his sufferings by moving his head or body. Occasionally there was genuine tetanic spasm; the neck or the whole trunk being then to a certain degree drawn backwards, as in opisthotonos: in such cases the jaw also was partially locked.

In not a few instances there were convulsive contractions of the limbs recurring every now and then: twitching of the tendons also was of not unfrequent occurrence in the advanced stage of the disease. Delirium generally supervened in the second stage; and was often followed by coma before the fatal issue. It is unnecessary to particularise any of the symptoms derived from the state of the sensory organs, as there was nothing peculiar in this respect in the epidemic. One occurrence deserves notice—to wit, that in a very considerable number of M. *Forget's* cases there was a well-marked eruption of *herpes* on the lips and sometimes on the chin.

The most frequent disorder of the digestive organs was vomiting. Generally it was present at the commencement of the disease, and was apt to recur occasionally during its progress. It seemed to be owing rather to a sympathetic irritation, than to any actually morbid state of the stomach itself. The bowels were usually constipated at the same time; though this state was not unfrequently followed by diarrhoea towards the close of the disease.

The condition of the pulse varied exceedingly; very often it was as slow or even slower than in health at first, becoming afterwards more or less quickened though seldom full, and perhaps also irregular or intermitting.

We give the following case to illustrate the general characters of the disease.

A young man, when admitted into the hospital, presented the following symptoms:—great prostration of strength, sunk appearance of features, restlessness, thirst, intense headache over each temple, great pain along the spine, rapid pulse, urine deep-coloured. Six days previously, after drinking freely of beer, he had been seized with vomiting, headache, and symptoms of feverishness. The vomiting had continued up to nearly the period of his admission into the hospital; but it had ceased then. He was bled and ordered to have tartarised lemonade frequently. Next day (27th Feb) the report states that he had been delirious during the night, but was now composed and could answer questions. He complained of pain all over him, and of great stiffness along the back and neck. His tongue was much parched; the pulse was 108 and irregular. The blood drawn yesterday was 'plastique.' He was ordered to be freely cupped along the spine, to have cold lotion applied to the head, a poultice to the epigastrium, and a solution of gum for drink. In the course of the evening of this day, comatose sub-delirium came on, and the rigidity of the spine was greater than before. He was again bled, and had a dose of calomel occasionally. On the 28th, it is stated that he had been delirious all night, and had passed a stool unconsciously: 20 leeches were ordered to be applied to the temples, the use of the calomel to be continued, and mercurial ointment to be rubbed in along the spine. Next day he was nearly in the same state: the head was shaved, 20 more leeches were applied to the temples, and the rest of the treatment was continued as before. On the 2nd of March, we find that he lay in a state alternately of coma or of delirium; the tetanic stiffness of the back continued; there were frequent twitchings of the muscles of the limbs, and occasional jerking of the tendons. Next day he died.

*Dissection.*—"Between the arachnoid membrane and the pia mater—which was highly injected—there was a layer of concrete pus covering almost the entire upper surface of the brain: it was most conspicuous along the grooves in

the course of the blood-vessels. The cerebral substance appeared to be nearly normal, and there was no effusion in the ventricles. The spinal marrow seemed to be sound, except towards the cauda equina, where there was a layer of pulpy matter quite similar to what was found on the surface of the brain. There were patches up and down of redness on the mucous surface of the stomach and intestines: the bladder was full of dark-coloured urine."

This case may be taken as a specimen of the general character of the epidemic. (We cannot dismiss the report, without pointing out to the English reader a dangerous error—so common among French practitioners—of continuing sanguineous depletions so long, and pushing them so far, in such diseases as these we are now considering. It is only in the first stage that they can be safely employed; afterwards we must trust to other remedies, such as cold to the head, blisters to the neck, the use of combined saline aperients and diuretics, &c. In all such diseases we should strenuously recommend the physician to promote a copious flow of urine: there is perhaps no evacuation, the state of which indicates so well the course and probable termination of the malady as this.—*Rev.*)

M. *Forget's* next case terminated favourably under the vigorous employment of free and repeated bleeding, general as well as local. But how can he, a clever man, presume to say that the "meningitis in this case had certainly passed on to suppuration." Surely the mere obstinacy of the malady and the tendency to repeated relapses are not proof sufficient, as he supposes, of such a position. So much for the extravagant length to which dogmatism will go!

In some cases, although the symptoms were by no means urgent or severe, the patient quickly and unexpectedly sank. In one of M. *Forget's* patients, a young woman—who had been only two or three days ill, and not alarmingly so, who had been walking in the ward of the hospital on the evening before—while in the act of rising to take drink, fell back and expired. The *post-mortem* appearances were by no means satisfactory to account for the fatal event. In another case, the attack had a remarkably apoplectic character; occasionally the disease exhibited much of the appearance of *delirium tremens*.

The fatality of this epidemic seems to have been great; for out of 40 cases treated by M. *Forget*, there were 22 deaths.

Our author, as may be supposed, details with great minuteness the necroscopic characters of the disease. But as these were quite the same as are usually met in cases of ordinary sporadic meningitis, we shall pass them over. His remarks, however—brief and imperfect as they are—on the state of the blood which was drawn deserve notice. These are his words:—

"It was usually plastic,—(what exactly is the meaning of this epithet!;—fibrous, and without any appreciable alternation of its physical properties. In several cases we observed a *slight buffy coat*, of greater or less consistence; but never that thick and firm buff (*couenne*) which we find in most serous inflammations; nor yet that diffuent, loose, and mucus-like buff, and that dissolved state of the coagulum which characterise, *it is said*, septic diseases, or, to use the language of M. *Piorry*, the 'septico-hemies.' It would have been interesting to have applied those microscopic and chemical tests which have recently been 'mis en honneur' in the examination of diseases; but such criteria were not necessary 'à l'établissement de nos convictions;' as all the other phenomena were amply sufficient to our mind to determine the decidedly inflammatory character of the epidemic."

There is a good deal in this short paragraph to comment upon, and we are tempted to make a few observations. We must premise our remarks by reminding our readers that M. *Forget* belongs to the Broussaiian school, and is not very friendly to the resuscitation of the humoral views which have lately been introduced by M. *Andral*, and which we have explained so largely in the recent numbers of this Journal. Indeed he wrote a public letter not long ago to his distin-

guished countrymen—vide No. 70 of the *Medico-Chirurgical Review* for Oct. 1841—and received an answer from him on this very subject.

Well then, it will be observed that M. *Forget* himself admits that the blood drawn from patients affected with the epidemic meningitis was, so far from being uniformly buffy, only *slightly so* in certain cases. He may call it plastic and fibrinous, although, as already said, we scarcely know the meaning of these words; but certain it is that it was not buffy, in the usual acceptation of that word. M. *Forget* seems to have been aware that many of his readers might be disposed to regard his “epidemic meningitis” rather as a species of fever attended with marked cephalic symptoms—just as the *grippe* or influenza is a pyrexia accompanied with more or less severe bronchitis—than as a genuine and essential inflammation, or phlegmasia; and he therefore somewhat artfully adds that “the *couenne* or buff was not diffuent, and mucus-like, nor was the coagulum in a loose dissolved state, as we find in septic diseases.” True; but the blood is not necessarily in a dissolved state, nor even is it much changed in any respect, in many fevers. So M. *Andral* has expressly stated, and so the unprejudiced experience of every physician will testify. As we have commented at considerable length on this very subject in our notices of M. *Andral's* researches, we need not dwell much upon it at present. Suffice it therefore to state that in many of the *pyrexia*, the blood seems to undergo very little change, at least in its outward and physical characters; whereas in all the genuine *phlegmasia* there is always an increase in the relative proportion of the fibrine. Now this is a very important circumstance to attend to; as it is an axiom, we believe, of very general application that the system will never bear sanguineous depletion so well when there is not, as when there is, an excess in the proportion of this very element. It will not do for M. *Forget* to tell us that he does not require the assistance of any of those analytic means, which have been recently “mis en honneur,” to enable him to determine whether a disease be “franchement inflammatoire” or not. An enlightened physician will gladly avail himself of every rational means to direct him in his diagnosis and treatment, and above all he will not neglect the opinion of such a man as his countryman *Andral*, who has so wisely kept himself apart from the dogmas of any particular school in medicine.

But we must be now drawing this article to a close. It would be needless to dwell long upon the treatment followed by M. *Forget*, as it is strictly Broussaian, and our readers will know that we are anything but favourable to the heroic practice of the great *reformateur*. Our author seems to have a great aversion to calomel, “cette déplorable panacée,” not only in this, but seemingly in most other cerebral diseases. He adjures his brethren to tell him how often they have witnessed any good effects from the employment of this remedy, “par lui meme,” in the acute hydrocephalus of children, or in the encephalitis of adults. The answer to such a question is very simple: no sensible man, at least among English practitioners, ever dreams of trusting to any single remedy exclusively, “par lui meme,” in the treatment of an active inflammation or fever. He, who does such a thing, is not a physician, but a mere experimenter. This little expression—par lui-meme—dropped so accidentally from the pen of our author, has a vast deal of meaning in it, if kept in mind when we endeavour to appreciate the merits and demerits of the French school of medicine. It lies at the bottom of a great deal of their practice, and is, as we have so often endeavoured to explain, the source and fountain of most of their practical blunders. We again repeat that there is not an acute disease in the whole nosological catalogue which ought to be treated with one single remedy, whether this be bleeding, calomel, purgatives, &c. &c. The skill of the talented physician is to use various means, all tending more or less directly to the same end although working differently, yet so artfully associated that each may assist and promote the sanative action of another. Let us take the case of any phlogistic disease, as, for example, synocha, rheumatism, or acute dropsy.

Generally speaking, no experienced physician will trust for the cure of these maladies to the use either of purgatives, or of sudorifics, or of diuretics. The chance is that he will begin by ordering a certain quantity of blood to be drawn from the arm before he resorts to any of these medicines; well knowing that by so doing not only will the severe symptoms be immediately relieved, but the action of these very remedies will be vastly promoted. How often will a gentle aperient act most efficiently after blood-letting, when the bowels had resisted patent purgatives before; and every practical man knows well the marvellous diuretic and diaphoretic effect of a dose of sweet nitre or of opium, when the system has once been relaxed from loss of blood.

Such are the considerations which induce us to object *in limine* to M. Forget's testimony being admitted as any authority as to the curative properties of calomel in cerebral diseases. This, like every other remedy, may be, and no doubt is abused in a multitude of cases; but he, who refuses to have recourse to it, is the treatment of acute hydrocephalus, wilfully deprives his patient, in our opinion, of one chance of recovery—*notwithstanding M. Forget's* alarms about "stomatites desesperantes," "diarrhées rebelles," and various other disastrous consequences induced by this "abominable remède!" Besides calomel, he seems to have the fear of all purgatives constantly before his eyes. "Not daring," says he, "to employ evacuants by the superior passages, I naturally had recourse, when emollients were insufficient, to the administration of laxative lavements, prepared with milk and honey, oil, senna tea, salt, &c.; and very often I had to congratulate myself, when diarrhœa came on, that I had not resorted to more active remedies."

His remarks upon the use of opium are much more judicious; and as he pays a compliment to one of the greatest ornaments of British medicine, we must give a few lines of the original passage.

..... "When meditating upon the writings of one of my favourite authors, the illustrious Sydenham, I had been struck with the success which, it appears, he derived from the administration of opium in various diseases attended with cerebral distress, in malignant fevers, in small-pox, &c. At the same time, I remembered the very evident advantages which I had obtained in my own practice in several cases of delirium, which had resisted the use of antiphlogistic remedies. I resolved therefore to make a trial of it in our epidemic, and the results have certainly surpassed my fondest hopes. When the inflammatory stage was once fairly subdued by bleeding and other antiphlogistic remedies, and yet such symptoms, as headache, delirium, or spasms continued, the effects of opium were in many cases quite marvellous—all the distress vanished as if by enchantment. We may observe, as a remark of general application that opium will be found most useful when there is a morbid exaltation of the nervous functions, and least so—perhaps even hurtful—when there is coma, paralysis, or other symptoms of prostration (affaissement).".....

"The results of my practice overthrow, I must admit, in some degree the classical ideas which I entertained as to the action of opium: it is so generally admitted that this medicine is not admissible in inflammatory diseases, and especially in those of the encephalon. But, after reflecting upon the subject, I have been able to explain it rationally to my own mind. This explanation is implicitly comprised in the precept laid down by Sydenham—viz. that, when the inflammatory element of the disease has been subdued by the use of antiphlogistic remedies, there is no danger of the symptoms being aggravated by opium, if judiciously administered. Whatever may be thought of this theory, it is sufficient for us to certify the facts which we have observed in practice. We only regret that this "inspiration" (!) did not come to our minds sooner; for we might have availed ourselves of it for practical purposes on very numerous occasions. But the relations of cause and effect have been so manifest that we—  
optical as we are on the score of therapeutic innovations—do not hesitate to

publish our observations, as the expression, if not of a discovery, at least of a most useful resuscitation."

This long paragraph contains about one grain of good practical sense amidst a bushel of unmeaning pompous verbiage—announced certainly "avec trop de complaisance"; but for that single grain we are thankful, as it shows to the most prejudiced how much sterling information may be derived from the writings of the older physicians, who knew nothing of the "grandes decouvertes" of modern times. We much doubt, however, whether the "grand observateur (Sydenham)" who has written so much and so well on the influence of what has been called the *medical constitution* of the atmosphere, &c. would agree with M. Forget in regarding the late epidemic meningitis at Strasbourg as essentially and in every respect the same disease, and requiring exactly the same mode of treatment, as any sporadic and casual case of inflammation of the membranes of the brain and spinal marrow. In our opinion, the two cases are indeed "alike, but (often) oh! how different."—*Gazette Medicale*.

#### CAN THE FUTURE STATE OF THE MILK BE PREDICTED DURING PREGNANCY?

M. Donné is of opinion that it *can*; and in a very simple manner—by examining the state of the viscid, yellowish secretion which very generally, he says, may be squeezed out of the breasts of pregnant women, and to which the name of *colostrum* has been given. This imperfectly-formed milk varies much both in quantity and in its physical properties in different cases; and M. Donné thinks that "he has ascertained that there is a very uniform relation between the nature of this fluid secreted during pregnancy, and the milk that is formed after delivery; or, in other words, that the examination of the colostrum and of its principal characters, enables us to predict what will be the condition of the mammary secretion, its quantity and its essential properties."

The following are the chief conclusions to which his inquiries have led him:

1. In some women, scarcely a single drop of the *colostrum* can be made to exude from the mammae during pregnancy. When this is the case, the secretion of the milk afterwards will "presqu' à coup sur," be scanty after delivery, and probably insufficient for the infant.

2. When the *colostrum* is abundant, but thin, watery, or like a thin mucilage, and does not exhibit any *striae* of a yellow-coloured, thick and viscid matter,—the italic letters are M. Donné's—the milk afterwards formed is almost always poor, and not nutritious.

3. When the *colostrum* is—in the eighth month of pregnancy for example—moderately abundant, so that a few drops can be obtained from the mammae without difficulty, and especially when it is found to contain distinct *striae*\* of a yellow-coloured thickish matter, we may almost confidently predict that the milk will be sufficiently copious, and of good quality.—*Conseils aux Meres*, &c. Paris, 1842.

*Remarks.*—We confess that we have our doubts whether experience will warrant the importance of the signs mentioned by M. Donné. He is one of those zealous, enthusiastic men, full of cleverness and hope, who are apt to arrive at

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\* With the assistance of the microscope we often discover that the *colostrum* is rich in milky globules, already well formed, of a good size, without any admixture of mucous globules, and that it contains also a greater or less quantity of granular corpuscles.



positive conclusions rather more quickly than we slow-footed Englishmen can approve of. But it is always well to know what our neighbours are thinking and doing; as not a few useful hints may occasionally be derived from the very errors which they are apt to fall into.—*Rev.*

#### ON THE QUALITIES OF THE MILK, AND THE MEANS OF ASCERTAINING THEM.

We need scarcely say that the old practice of judging of the qualities of a nurse's milk, by looking at a drop of it on the thumb-nail, is not to be depended upon: although some medical men still continue this practice with the view, we suppose, of satisfying popular prejudices.

Milk, we know, consists of several distinct constituent parts; some of them are dissolved like sugar in water, while others are in the solid form and pass through the fluid as minute particles or globules. The *soluble* ingredients are principally 1, the caseum—the basis of cheese—2, a peculiar sort of saccharine matter; and, 3, various saline substances; the *insoluble* are only of one kind; viz. the fatty portion which produces butter. Milk may therefore be regarded as an emulsion or *looch*, in which the caseum, sugar and salts are dissolved, and the oil suspended through it in fine particles.

These various ingredients cannot be distinguished by the naked eye; but if a drop of milk be put on a watch-glass, and examined with a microscope of about 300 magnifying powers, we shall at once perceive a multitude of rounded, transparent, pearly-looking grains, floating in a limpid fluid: these are the globules of the milk, and it is they which constitute the butter obtained by churning. In pure unadulterated milk, we observe no other substance but these globules; varying much in dimensions, but all having the same general characters. It is therefore to be regarded as an unfavorable circumstance, if there be present any other particles besides the proper milky globules—such as we find under certain circumstances which we shall presently mention.

The richness, and therefore the nutritive quality, of the milk, is pretty exactly represented by the number of globules which it contains; and in proportion as these abound, so usually does the quantity of the caseum and the sugary matter also.

It is therefore obvious, that the microscopic examination of the milk affords much very useful information; it only requires a little experience in the use of the instrument to satisfy any one of this. The difference between the milks of different women is sometimes most striking; in one there is an immense number of globules, all regular, well-formed, and of a good size; while, in the other, they are small, sparse, and look like fine dust diffused through the liquid.

M. *Donné* assures us, that he has repeatedly compared the results obtained by microscopic examination of milk with those which chemical analysis of the fluid affords, and that they always agreed in their general characters: as a matter of course, there was more numerical exactitude in the latter way, but this extreme nicety is not required for the purposes of practical medicine.

The quantity of cream that forms upon milk is a simple and very useful means of determining its richness; this plan is scarcely applicable in the case of women. The cream is nothing but the coalescence of the milky globules, which, from being lighter than the medium in which they float, rise to the surface. M. *Donne* says that, according to his experiments, a healthy woman's milk yields about 3 per cent. of cream, while that of the ass gives one or two only, and that of the cow from ten to fifteen, or even twenty. This experiment is easily

made with the aid of graduated tubes : but, however useful it may be as an auxiliary means, it should never supersede the employment of the microscope.

*The Milk becomes thinner by remaining in the Breasts.*

A distinguished chemist, M. Peligot, has shown, by a multitude of ingenious and very satisfactory experiments, that the longer that the milk sojourns, after being once secreted, in the breasts, the more thin and watery it becomes. He says, that if the product of one milking—that is, all the milk which a cow, for example, yields at one time—is divided into three portions, by being received into three different vessels, the first milk is thinner than the second, and the second than the third, this being the most substantial of all.

This fact, indeed, is not unknown to many nurses, who have observed that the milk that first flows from their breasts in the morning, when perhaps they have not suckled during the whole of the preceding night, is thinner and more watery than what comes afterwards.

*Formation of the Milk : the Colostrum.*

We have already said that a milky fluid begins to be secreted by the mammæ, long before the birth of the child.

It is found on examination to contain milky globules which are more or less perfectly formed, united together in small masses, or heaps, by means of a mucous matter—and also corpuscles of a peculiar nature which I have called granular bodies. The composition of this first milky secretion does not alter immediately after delivery, and the colostrum, therefore does not all at once become perfect milk. It becomes more abundant, it fills the mammæ, but we readily perceive by its yellowish colour and its oleaginous appearance that it is not genuine authentic milk.

The name of *colostrum* is therefore still retained ; and it is generally believed to have slight purgative properties on the infant, and thus to promote the evacuation of the meconium.\*

If such be the case, it is obvious that those children who are not suckled by their mothers, require some aperient medicine after birth more than those who are.

It is only after the milk fever has passed over, and after the infant has drawn the breast several times, that the mammary secretion acquires its characteristic properties, that it loses the oily and other strange elements, and no longer retains the viscid consistence and the yellow colour, which it had at first. Even after the change to true milk has taken place, it will be found with the microscope to exhibit for several days a small quantity of the proper granular particles of the colostrum ; the proportion of those gradually diminishes until, about the sixth or eighth day, they are no longer appreciable.

In some women, however, the milk does not lose the admixture of these granular corpuscles for weeks or even months, so that its secretion is never in a state of perfect purity. This condition—which, be it remembered, cannot be detected by the naked eye of the most practised observer—it is very important to ascertain, more especially when we have to select a nurse, for suckling. The following are M. *Donné's* observations on this subject.

“The presence of granular corpuscles in milk after a certain period is unquestionably to be regarded as an irregular and morbid condition ; for we observe they are produced and become more and more numerous when the health of the nurse is deranged by disease, whether this be general or of the

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\* The meconium consists in a great measure of the intestinal mucous—the elements of which may be recognized with the aid of the microscope—and also of a certain portion of biliary matter.

mamma itself. Thus, under the influence of fever, or of an engorgement of the gland itself, the milk which may previously have been quite free from them, is often found to exhibit their presence.

The effect of the change is in general very speedily observable on the health of the infant; it exhibits all the signs of being imperfectly nourished: it is peevish, and uncomfortable; the bowels are generally relaxed, and the stools are seldom healthy."

..... "The alteration of the milk," adds our author, "by an admixture of the elements of the colostrum, is one of the conditions which will be found to be most generally coincident with the sickly state of infant health."

#### *Chapped Nipples.*

M. *Donné* is of opinion that this most troublesome, and often most distressing complaint is, very often at least, connected with an altered state of the milk itself. The milk will, in many such cases, be found to be poor and watery, not very abundant, and to contain more or less of mucous matters. The child being imperfectly fed, and finding difficulty in drawing the milk, pulls at the nipple more than usual; and perhaps at the same time its saliva is more saline than usual, and thus contributes to increase the irritation.\*—*Conseils aux Mères, &c.*

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#### ADULTERATION OF MILK WITH CEREBRAL MATTER.

There has been no little stir of late among the inhabitants of Paris in consequence of a statement having made its appearance in many of the journals, that the *laitiers* of that milk-consuming metropolis were in the habit of re-creaming skimmed milk by mixing with it a certain portion of sheep or calves' brains made into a sort of thin paste or emulsion. The Academy, as in duty bound, had the subject elaborately discussed before them, and not a few learned memoirs have been read and written upon it. One of the best modes of detecting this clever cheat—we say *clever*, for it would seem that the adulterated milk, independently of its not being positively deleterious, is quite free from any unusual smell, taste, or appearance—is to examine the suspected fluid with the microscope viewed under a magnifying power of from 300 to 500 powers, we may readily observe, blended with the ordinary globules of milk, pieces of tubes, or torn membrane or blood-vessels, very different from the amorphous greyish masses which milk is apt to exhibit after boiling.—*Gazette Medicale.*

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#### ON SUICIDE.

It is a melancholy fact that the frequency of suicide is, alas! too often in proportion to the extent of civilization to which a people has attained. The remark indeed might seem almost paradoxical, were we not painfully aware that, when we speak of civilization, we generally think only of intellectual and little, if at all, of moral advancement. As long as only one set of our faculties is improved

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\* The chapped state of the nipples may be, and we have no doubt is, in many instances, connected with some defect in the state of the milk itself; but this is certainly not always the case. The application of a weak solution of the sulphate of zinc, or of the tincture of catechu or kino, immediately after each act of suckling, will often speedily cause the fissures to heal; while the infant has at no time seemed to have suffered from the inconvenience to the mother.

by education, we shall often find that but little good is effected; or, at least, that the good, such as it is, is frequently counterbalanced by a proportionate amount of mischief. A celebrated character of the present day has wisely remarked in reference to the education of the lower orders, that if you do not blend religious with secular instruction, you are merely making them more *clever devils*. There is much sound wisdom in this pithy observation, as every one, who has watched the manners of the population of a large city, or paid even a very superficial attention to the history of bye-gone times, will at once admit. The mind of man is a good deal like his body in this respect. No one need be told that by far the most important rule for preserving the health of the latter is to give every part its due and regular exercise. It will not do to exercise one limb to the exclusion of the others, or stimulate any one function more than its fellows. A man's arm may be made more brawny by the long-continued use of the sledge-hammer or paviour's beetle; but the general health is not thereby improved; so far from this being the case, there is very often induced by these very occupations a tendency to heart disease, or to rupture, or to weakness of the back. Or, to take another example, the digestive energies of the stomach may be increased by the regular use of bitter infusions and tinctures, and a person be thereby enabled to consume a much greater quantity of food, and to extract too the nutriment from it, than any person who does not provoke his appetite. But then is not the consequence of such repletion very generally a plethora, or morbid accumulation of fat, or some other ill that lays the foundation for early decay?

Health consists not in the overaction of one part but in the consentaneous exercise of all parts of the body. Observe the effects of those exercises that call into play all the muscles of the limbs and trunk—for example, riding on horseback or swimming. Not a part then or sinew but is summoned into action to balance the body in the one case and to push it forward in the other. Those exercises on the other hand, which require an excessive straining of one part only, are generally injurious in the long run. Many a youth at Eton and Cambridge lays the foundation for cardiac mischief in their feats of boat-racing; and we need scarcely say that the celebrated opera-dancer is usually more early decrepid than other folks who have not pirouetted so bravely on the light fantastic toe.

Well; and so it is in the same way with the mind. If one set of its faculties be exercised unduly, while others are neglected, a vitiated and unhealthy state of things is the consequence. A few brilliant feats of cleverness may be displayed—and even these are often merely illusory and transient—but no fine and healthy harmony can be thus obtained. A man may become a walking dictionary of knowledge, and yet remain a poor unhappy, discontented, and perhaps withal a knavish fellow. He may study mathematics until he reason every spark of poetical feeling out of him; or he may so luxuriate in the high heavens of a poet's fancy that he utterly unfits himself for the every-day concerns of this nether world. It is not by an exclusive education of one faculty—however astonishing the results that may be thus obtained—that a truly *great* mind can be reared; nor is it by the exclusive cultivation of the intellectual powers, while that of the moral feelings is neglected—that a truly *great* and *good* character can be developed. The same law, as we have already said, holds good with respect to the mind that does with respect to the body—all its powers, and properties, and faculties must be equably and consentaneously exercised, if we hope to keep it in a healthy and continued vigorous condition. If the reasoning faculties only are cultivated, the character becomes cold, calculating, and passionless; if imagination have its full swing on all occasions, unchecked and unbridled, the character will be visionary and unsteady; and if the moral faculties, even those whose natural bias is to virtue, be indulged in overmuch to the neglect of the intellect, the character, though in many respects very estimable, will be weak, easily led aside, and too often unhappy and discontented.

Dr. *Krugelstein* was in a clear-seeing, sound-thinking mood when he wrote the following remarks:—

"I am convinced that a healthy organization and a due apportioning of the corporeal and mental energies are the only true conditions of a sound judgment—which is the result of a perfect equilibrium and constant harmony among the various faculties of the mind. According to this view, the physician will regard the predominance of any one faculty or set of faculties very differently from what is too generally done; and far from being ready to acknowledge the superiority of that mode of education which can develop what are called such brilliant results, he sees nothing in such a system but the precursory symptoms of coming disease. The further that we deviate in the education whether of mind or body from the obvious intentions of Nature, the more we shall find ourselves to be at fault."

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The history of suicide, and of the light in which it has been regarded in different countries and in different times, deserves some attention.

The ancients, generally speaking, do not appear to have condemned it; and there is no positive or express denunciation of it either in the Old or in the New Testament. *Saul* fell upon the point of his sword, and destroyed himself; and yet he was buried and *David* lamented over him. *Architophel*, on finding that the rebellion which he had instigated proved unsuccessful, hanged himself, after making his will—this proves that his voluntary death did not bar the validity of the act—and was buried in his family burial-place. *Christ* has nowhere alluded to the commission of suicide; and, in relating the death of *Judas*, none of the Evangelists express any opinion as to the deed. *Josephus*, however, expressly mentions suicide as a crime: "This crime," says he, "is condemned by God, and deserves punishment; it is for this reason that we have instituted the custom of casting the bodies of those who have destroyed themselves out of their houses, and leaving them exposed until sunset, although we do not refuse burial even to our enemies." Dr. *Krugelstein* says, upon what authority we know not, that the practice, although not sanctioned by the inspired writings, was introduced by the Rabbins, just as the refusal of the ordinary rites of burial has been recognized in many Christian countries, although there is no warrant for such refusal in any part of the Bible—except perhaps in one passage of *Jeremiah*, where the prophet threatens *King Joachim* that he shall be buried as an ass—i. e. that he shall be cast out of the gates of *Jerusalem*.

The Stoic philosophers seem rather to have approved than condemned the act, at least in many cases. *Epictetus* says distinctly: "Before all things, remember that the door is always open. Be not more timid than a child, who leaves the fire whenever he gets tired of it. If you remain, do not be making complaints. If it does not suit you to bear pain or distress, Jupiter has left a door open to you; why not take your leave, and cease to accuse the Gods."

*Ælian* tells us that it was quite customary for very aged people, who thought that they could no longer serve the state, to make room for the rising generation by self-destruction: "Consuetudo est apud *Cæos* ut ii, qui senio plane confecti sunt, tanquam ad convivium se mutuo invitent, aut ad quoddam solemne sacrificium convenient, et coronati cicutam bibant, cum sibi ipsi conscii sunt, se ad promovenda commoda patriæ inutiliter amplius esse, animo jam ab ætate delirare incipientes." Such a set of silly old geese!

*Montaigne* tells us that at *Marseilles* the public authorities always kept a poisonous compound, prepared from the hemlock, which was given gratuitously to any person who had previously satisfied the Council of the Six Hundred as to the motives which impelled them to wish for death.

Scarcely any two nations have agreed in their regulations respecting suicide. The Romans seem to have taken but little notice of it, except in the case of liars. *Frederick the Great*, however, refused to ratify the sentence of a court

martial, which had condemned a soldier to imprisonment for having attempted to commit suicide: he said that no one in the perfect possession of his senses, ever made an attempt on his own life, and he ordered the soldier to be handed over to the doctors to bleed and physic him.

*Napoleon* took a far sounder view of the matter; he was well aware that the commission of suicide was not, as many men in the present day would have us to believe, a proof *in se* of insanity. His celebrated proclamation to the army on this subject deserves to be known by all.

*Order of the day, St. Cloud, 22 Floreal, an. X.*

"The grenadier Groblin has committed suicide, from a disappointment in love. He was in other respects a worthy man. This is the second event of the kind that has happened in this corps within a month. The first Consul directs that it shall be notified, in the order of the day of the guard, that a soldier ought to know how to overcome the grief and melancholy of his passions; that there is as much true courage in bearing mental affliction manfully, as in remaining unmoved under the fire of a battery. To abandon one's self to grief without properly resisting it, and to kill one's self in order to escape from it, is like abandoning the field of battle before being conquered.

NAPOLÉON.  
BESSIERES."

In this as all the other proclamations of this great man, a strong appeal is made to the sense of honour in his army; there is never an allusion to any higher obligations than those of being a good citizen and a good soldier. Be it remembered, however, that wilful suicide is a crime not merely of a *civil* but of a moral nature.

Formerly it was a common practice to inflict all sorts of indignities on the bodies of the poor wretches that had taken their lives. In some instances, indeed, this seems to have had some effect in deterring others. For example, we read that when *Tarquin* ordered that the bodies of those who flung themselves off the Capitoline Hill, should be nailed on crosses and exposed to public view, the threat very manifestly checked the Roman gentry and rabble from the "perilous leap;" and a like effect was produced, we are told, on the women of Marseilles, who at one period were quite *distinguées* for their suicidal propensities.

Such means are all very proper to intimidate weak minds—for others would not be affected by them—when any imitative or epidemic phrenzy of self-destruction makes its appearance among a set of people; but we must seek for other correctives against the evil as it shows itself in the usual run of cases.

"Let governments," says our author, "educate and instruct the people, let them watch over their manners and habits, let them strive to oppose the debauchery, the intemperance, the gambling, and other evils of our age, let them—if possible—check the perusal of immoral and licentious books, and the exhibition of spectacles of vice upon the stage, let them relieve the distresses of poverty and disease, and not utterly neglect and cast off such persons as have become the victims of melancholy and grief."

Noble words! and no less true than noble. A little further on he breaks forth into this eloquent appeal. "How can we possibly calculate all the circumstances which may have impelled an unhappy being to take his own life? Who will flatter himself that he can know all the doublings and windings of thought, and all the secret feelings, which may have been working for a length of time in his breast? Where is the man that will be so bold as to say, 'Had I been in the place of that man, I should certainly not have acted as he has done?' There must always be much obscurity and much uncertainty hang over this melancholy theme in almost every case; and all that it is permitted us to do is to lift our hands and hearts to Heaven in prayer and say, 'O! Lord, lead us not into temptation.'"

Is Dr. *Krugelstein* quite correct when he says that "all physicians are agreed in considering the act of suicide as the result of insanity"—in some, we hope many, cases it is so; but surely not in all. Of late years *Esquirol* and *Marc* have written valuable works on this subject; but, however clever these works may be, we (the Rev.) should be unwilling to receive implicitly the conclusions of French writers upon so delicate a subject; there is too pervading a spirit of materialism, and of the necessary consequences which must attend such a belief, in almost every branch of their literature, to suit our English notions on questions which are partly medical and partly ethical. *Gall* carried his fancies so far at first as to believe that there is an *organ* in the base of the brain of *self-preservation*, and that in suicides this is unusually small. Subsequently he admitted his error, and came to the conclusion that every case of premeditated suicide is an act of mental alienation—occasioned very often by a thickened state of one or more of the cranial bones, and the shrinking of the subjacent portion of the cerebral matter.

That cerebral disease exists in some cases of suicide no one will call in question, but few, we should hope, will receive the opinion of *Gall* on this subject. Suicide in almost every case is rather a mental than a bodily disease; and by far the most usual causes are either violent passion, or intense or protracted grief, or a weariness or spirits—too often the result of worn-out physical energies—or the strange but acknowledged influence of mere imitation. One common feature that will apply to 99 cases out of a 100 is, that the mind of the victim was, in some respects at least, ill-regulated and unequally poised: there must have been an excess of some faculty or emotion, and a deficiency probably at the same time of other faculties or emotions. If all classes of society, under the various trials and afflictions of life, could but feel the importance—and act too up to the feeling—of that sublime prayer, "It is the Lord's will; let Him do what seemeth good unto Him;" we should hear less of men and women opening with their own hands the "bloody house of life," and rushing into the presence of their Judge, "unhouselled, unanointed, unanæled."

Let it not be imagined that we totally reject the influence of bodily indisposition or pain as tending to induce suicidal propensities. No one, who has experienced the depressing effects of continued dyspepsia, or of dyspnoea—especially when this is at all connected with cardiac derangement—or of certain cephalic or abdominal disease, can hesitate to admit that the state of mind much depends upon the condition of the bodily health.\* But then it will never do, even in such cases as these, to attribute every thing to the physical cause; else how do we see that the same diseases often exist in other persons, without being necessarily accompanied with any thoughts of self-destruction? The secret consists in this, that in the one class there is an ill-balanced, ill-directed state of mind, impatient of affliction and disappointment, discontented and repining; while in the other class there is more of cheerful submissiveness, and more of that quiet enjoyment, which springs from a "*mens conscia recti*." That there are however occasionally cases, in which so thick a cloud of darkness has settled around all the faculties and energies of the mind as to plunge it into the very depths of the most wretched despair, is alas! but too true—witness poor *Couper* for example; but his case was most indubitably one of decided insanity—owing perhaps to cerebral disease, which, by-the-bye, must have been wofully aggravated by his mode of life, more especially the non-indulgence of sexual passion.

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\* With no less truth than beauty, our mighty dramatist hath said—

                    "We are not ourselves,  
When Nature, being oppress'd, commands the mind  
To suffer with the body."

Dr. *Krugelstein*, after enumerating a host of bodily ailments, which, he thinks, may be predisposing causes of suicide, and dwelling at considerable length on the effects of youthful passion and intemperance, as too often instigating the mind to this fearful act, comments at length on the apparent influence of mere old age in some unhappy instances. He seems to think that the uneasiness of breathing, which in advanced life is so often connected with an ossified state of the rib-cartilages and incipient disease of the heart and great blood-vessels, may induce the suicidal propensity. The decay of the mental powers, too, and its not unfrequent accompaniment of querulousness and fretful apprehension—"fears are in the way"—make them weary of the life which they soon must quit. But let us hope, for poor humanity's sake, that the mind is then really in a state of imbecility or even actual insanity, when self-destruction is attempted in old age. How admirably Horace has described the infirmities of old age in the following passage:—

Multa senem circumveniunt incommoda, vel quod  
 Quærit et inventis miser abstinere ac timere uti,  
 Vel quod res omnes timide, gelideque ministrat,  
 Dilator, spe longus, iners, avidusque futuri,  
 Difficilis, querulus, laudator temporis acti.

It is almost unnecessary to say that the mere force of imitation—however strange this may seem at first sight—has much to do with the frequency of suicide at different times. Certain it is that, if there is anything unusual either in the means resorted to or in other circumstances connected with the act of self-destruction in one case, we may almost confidently predict that we shall hear of one or more similar instances soon. The fear of posthumous indignities has been known, as already mentioned, to check this imitative mania.

It has been said that the juices of certain plants have the effect of inducing a suicidal propensity: the *spondylium heracleum* is used, we are told, for this purpose by the natives of Kamschatka.

Dr. *Krugelstein* concludes his memoir by the following remarks:—

"My object has been to endeavour to convince governments, insurance companies, &c., that there is great injustice in looking upon suicide as in every instance a voluntary act, and at least that no opinion should be ever given until all the circumstances of each individual case are narrowly examined."

The mention of insurance companies here alludes to the circumstance of some of these associations declaring all policies of life insurance void where the parties have destroyed themselves.—*Encyclographie des Sciences Medicales*.

#### HYSTERIA; CATALEPSY; METASTASIS OF HEARING, &c.

A young unmarried girl, whose health had been long delicate, became subject to violent hysterical fits, in consequence, it seemed, of the irritation produced by a seton in the side—which had been inserted for the relief of obstinate pleuretic symptoms. The fits usually came an hour or two after eating. On one occasion she entirely lost her power of speech, so that she could not articulate a single word—this state lasted for three days; and then the speech returned after an hysterical seizure. Not long afterwards she experienced her first attack of distinctly-formed catalepsy; and from this period the paroxysms of this disease and of hysteria generally recurred several times in the course of 24 hours, the one alternating with the other. While she was in the cataleptic state, there seemed to be a complete insensibility of the entire surface of the body, so that it might be pinched or pricked without causing pain; the limbs and body retained



whatever position they were placed in; the movements of breathing were almost quite imperceptible; the pulse at the wrist could scarcely be felt at all, while that of the heart was exceedingly feeble and indistinct. This state sometimes lasted for one, two, or three hours at a time, the patient however not remaining all the time in this death-like repose; for every ten or fifteen minutes she would cough once or twice, and then a movement of some part of the body followed, or she would even suddenly start up, leap out of bed, climb upon a chair or table, &c., and there perhaps assume an attitude that was "*ordinairement fatigante*," but yet "*toujours gracieuse*:" her features on such occasions always wore an air of "*douceur et satisfaction*." In this state she would remain until a fit of coughing came on, or till she was removed to bed by her attendants. One curious circumstance in this, as in other cases of somnambulism, is that, although the eyes be quite closed, the person avoids with the greatest nicety any impediments in their way, and perform feats which they would not even attempt to do in their waking state. On one occasion she rushed to a window, opened it, and was on the point of throwing herself out, when she fell into a cataleptic paroxysm, with one foot out of the window, and the other resting on the ground: in this position she remained, until she was replaced in bed.

The cessation of each cataleptic fit was always indicated by the return of the respiratory movements, which gradually became more and more decided until the patient opened her eyes and recovered her intelligence.

During one of these attacks, Dr. *Duward* observed that, when he applied his hand to the epigastrium, the countenance of the girl gave expression of decided suffering, and to his surprise he found that if he applied his mouth to this region,—or, as subsequently was the case, to the soles of the feet or the palms of the hands—and spoke to her, she answered questions with perfect correctness, although she appeared to be utterly deaf to any auditory impressions on the ear itself. It was not even necessary that the mouth should be applied directly to the *impressionable* parts; the intervention of a stick or of a rod of iron, &c., the one end of which was applied to the epigastrium or to the palms or soles, and the other end to the lips of the speaker, did not at all prevent the patient from hearing what was addressed to her, as her rational answers to any questions put in this manner abundantly testified. Dr. D. confesses that he had often read of similar occurrences as this in books, but that he never felt inclined to attach any credit to the reports of them, till he met with the present case. . . .

"There was no sensibility in the integuments of any part of the body, except of the epigastrium and of the palms of the hands and the soles of the feet. The skin might be pricked or pinched, the hair might be pulled out by the roots, the nostrils might be irritated, &c., without the patient exhibiting any symptom of pain or uneasiness. But if the epigastrium, or the palms or the soles were even tickled gently with a feather, she immediately drew back, and her features indicated that something offended her. When the ball of a charged Leyden jar was applied to any of the sensitive parts, she at once made a violent start, and sometimes awoke up in a moment; but, strange to say, she remained quite motionless and passive even when the jar was discharged upon any other part of the body. (!)

The senses of taste too and smell were singularly perverted as well as that of hearing. The most pleasant or the most nauseous substances might be placed upon the tongue, and the nostrils might be stuffed with *assafetida* or tobacco, or irritated with hartshorn or æther, without apparently any sensation being excited; but if any sapid or strongly odorous substance was placed upon or approached to any of the sensitive regions, the countenance of the patient at once indicated that she was aware of it, and, if questioned, she answered at once whether it was pleasant or not, and could even sometimes tell the name of the substance used. When snuff was put upon her hand, she at once began to sneeze, although it produced no effect when pushed up the nostrils." (!)

There was, however, no transport of vision nor yet any *clair-voyance* with Mademoiselle Melanie.

Dr. D. subsequently lost sight of his patient ; but he heard that the hysterical and cataleptic attacks had become much less frequent and severe than formerly. All medical treatment seemed to have been quite unavailing.—*Gazette Medicale*.

*Remarks.*—Cases like the preceding are certainly very *droll*, to say the least of them ; and it will certainly puzzle the most knowing savant of the present day to account for some of the phenomena which they exhibit. There is one way, indeed, of solving the difficulty, and that is to deny *in toto* all the alleged facts, and to call all such statements by the very comprehensive appellations of *humbug*, and *tomfoolery*.

But be it remembered, that excessive incredulity may be quite as ridiculous as extravagant credulity. It is no good reason why we should utterly disbelieve any alleged fact, because we cannot explain its occurrence, or because certain circumstances or phenomena connected with it seem at variance with our ordinary experience. There are so many mysteries in the phenomena of life, which are, and will probably always be, utterly inexplicable, that it is no easy thing to say where our belief is to stop. Far be it from us to lend a complacent ear to the extravagancies which have been so absurdly exhibited of late years on the subject of animal magnetism : they are too ridiculous to last but as a “nine month’s wonder ;” but this is no sufficient reason for flatly denying or smartly ridiculing, the reports of all such cases as the preceding one.

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#### DEAFNESS CURED BY THE ENDERMIC USE OF MORPHIA.

As there is no set of complaints, which medical men are so puzzled to know how to relieve as those connected with hearing, we are always ready to receive a hint that may prove useful in some cases, provided it comes from a respectable man who is not an advertising aurist. The name alone of Dr. Hoebeke, the narrator of the following case, is a sufficient guarantee for its truthfulness.

A lady had become so deaf after an attack of fever that she could not distinguish a word, unless it was bawled into her ear by applying the mouth close to it. But along with the deafness there was always an incessant noise in the ears—at one time like the hissing of boiling water, at other times like the roaring of a hundred voices together—which was often so distressing as to cause headache and confusion of ideas :—these feelings were always worse when the head was on the pillow. There was a quantity of wax in the ears ; but no relief was obtained when it was removed. Nothing irregular could be perceived either in the ears themselves or in the throat. Leeches were applied behind the ears, and emetics and purgatives given ; but no relief followed. Supposing that the symptoms might be dependent upon some anomalous state of the nervous apparatus, a blister was applied behind each ear, and the excoriated surface was sprinkled with half a grain of sulphate of morphia. By the next day the noise and deafness on the left side had quite ceased, and on the right were much abated :—the headache, too, had disappeared.

As the unpleasant feelings still continued on the right side, a second blister was applied and treated in the same manner as before with morphia :—the success was decided, and the patient was quite freed of all her annoyances.—*Archives de Med. Belge*.

*Remarks.*—The medical man often meets with cases very similar to the preceding, and, in not a few, every thing they try is unhappily without avail. How

far the remedy proposed by M. *Hoebcke* will answer in many of these, we must leave to the experience of our readers to decide.

We may state that we have occasionally in such cases used with advantage a belladonna plaster, applied either to the temple, or behind the ear of the affected side. Many of the complaints of hearing seem to be exceedingly influenced not only by the state of the general health, and especially by that of the stomach, but also by the quietude or irritability of the temper, as well as by the varying conditions of the atmosphere. No wonder then that we are so often foiled in relieving them.

#### THE SURGICAL PRACTICE AT THE HOTEL DIEU.

In one of the late numbers of the French Medical Gazette there is a statistical report for 1841 of the surgical practice of Professor *Roux* at the Hôtel Dieu in Paris—the largest hospital, it is well known, in that metropolis.

The reporters preface their statements rather oddly; they say: "With the exception of a certain number of persons, whose complaints were not sufficiently grave to warrant their remaining in the hospital, almost all have exhibited some peculiarities worthy of notice. To avoid, however, extending this report too far, we have limited it to the great surgical questions, to unusual operations, to those which M. *Roux* has *instituées*, or which he has in some degree made his own by the perseverance and skill with which he performs them—all of which circumstances tend to give to his practice a peculiar degree of interest, and to attract a vast multitude of patients to his wards."

The total number of patients admitted under his care, during the 12 months, was 1441—of whom 1303 were males and 138 were females.

The operations performed were as follow:—

	Cases.	Deaths.
Amputation of the thigh . . . . .	8	5*
Amputation of the leg . . . . .	5	3
Amputation of supra-malleolar . . . . .	1	0
Amputation of the fore-arm . . . . .	2	1
Amputation of the metacarpal bones . . . . .	4	2
Amputation of the fingers . . . . .	7	0
Resection of the elbow . . . . .	3	1
Resection of a rib . . . . .	1	0
Extraction of sequestræ . . . . .	2	0
Trepan . . . . .	2	2
Cancer of the lower lip . . . . .	3	0
Epulis . . . . .	1	0
Cancer of the cheek . . . . .	1	0
Section of the genio-glossi for stammering . . . . .	1	1
Cancer of the tongue . . . . .	2	1
Cancer of the velum palati . . . . .	1	0
Staphyloraphy . . . . .	3	0
Excision of the tonsils . . . . .	4	0
Excision of an osseous cyst on the upper jaw . . . . .	1	0
Hernia, crural . . . . .	6	5
Hernia, inguinal . . . . .	3	
Fissure of the anus . . . . .	18	0
Fistula, recto-vaginal . . . . .	1	0
Anus, imperforation of, <i>Littre's</i> operation . . . . .	1	1

\* In one case both thighs were amputated.

	Cases.	Deaths.
Anus, at umbilicus . . . . .	1	1
Amputation of the penis . . . . .	1	0
Amputation of the testicle . . . . .	3	0
Lithotomy . . . . .	4	3
Lithotriety . . . . .	2	1
Excision of the mamma . . . . .	6	0
Strabismus . . . . .	6	0
Cataract . . . . .	41	0
Artificial pupil . . . . .	1	0
Varicocele . . . . .	5	2

With several others of minor importance.

The total number of deaths that occurred after operations was 34. If we add to this 56, the number of cases which proved fatal spontaneously, either from the severity of the accident sustained, or the gravity of the existing disease, we find the entire mortality to be 91 during the twelvemonths.

By far the most frequent cause of death after the operations was purulent absorption and the consequent contamination of the whole system, the induction of hectic fever, &c.

If we may judge from the truth of one year's experience, it would seem that cold weather is decidedly unfavourable to the success of great operations; nearly two-thirds of the deaths occurred during the months of January and February.

Erysipelas, it deserves to be noticed, was by no means very prevalent during this year: the absence of this most pernicious visitant may perhaps account for the comparative smallness of the mortality during the warm months.

There is very little interest in the separate details of this report; it is meagre and unsatisfactory. As we have heard so much for the last year or two of the *brilliant results* of myotomy, applied to various diseases, we select the following notice of *M. Roux's* practice in a case or two of stammering.

#### *Stammering; Section of the Tongue; Failure.*

The Reporters state with not a little justice that, even before the results of surgical interference in the treatment of this complaint were at all ascertained, a variety of operations had been proposed and adopted by different men. Unfortunately for them all, they seem to have now fallen into complete oblivion.

*M. Roux*, as a matter of course, was called upon to test the real merits of the cutting method of treating impediment of speech. In one case he divided merely the frænum of the tongue—in an old man, 60 years of age—which was perfectly free in its movements. This man certainly stammered most shockingly, all the muscles of his face being often thrown into convulsive spasms, when he made an effort to speak. No sooner was the frænum divided, than “avec beaucoup de netteté il se confond en remerciemens;” and he naturally expressed his astonishment that he should have been allowed to remain all his lifetime without relief. The cure seemed to every one at the time to be “brilliant and complete;” when, behold, he began to stammer as bad as ever, and in this state he remained during all the time that he was in the hospital.

In another case, *M. Roux* divided the *genioglossi* muscles at their insertion into the lower maxilla: here too the stammering ceased at the time; but speedily returned; and, when he left the hospital, he was no better than before. He subsequently put himself under the care of *M. Colombat* and derived considerable benefit—like the youth we alluded to in our last Number, who, after having had his mouth and tonsils most unnecessarily cut by *Mr. Yearsley*, has been quite cured by *Mr. Hunt*.

## M. RAYER ON PHTHISIS.

The principal facts embodied in a very elaborate memoir on this subject, which this distinguished physician recently read at the Academy, are these :

1. Tuberculous phthisis is, of all chronic diseases, the most widely spread among men and animals.

2. In man, and in other mammals, the tuberculous matter may be readily distinguished from recent pus, which is always loaded with granular globules. In birds, the characters of tuberculous matter are less distinct. Foreign substances introduced artificially into the lungs, or into the muscular flesh (of birds ?) occasion the formation, not of a white, opaque and globular fluid, like pus, but of a dry, yellow, unglobular matter, whose physical properties resemble a good deal those of genuine tubercles.

3. Purulent matter in mammiferous animals,—more especially in the horse,—undergoes, after a long sojourn in any organ, successive transformations, so as sometimes to assume the appearance of tuberculous matter.

4. Pulmonary tubercles in man, and also in quadrumanous animals, have usually a greyish colour.

5. The central softening of tubercles cannot be attributed to inflammation. They never exhibit any globules of pus. But the softening of the circumference or exterior of tubercles is certainly favoured by the inflammation of the adjacent tissues ; and there they are almost always blended with pus.

6. The yellow matter, which is found in hydatidic cysts—after these have burst—in ruminating animals, has some analogy with the tuberculous matter of the *pommeliere* of the cow ; but the cysts, that are filled with this matter, almost always contain the debris of the hydatidic pouch, and sometimes also a certain quantity of pus.

7. The cretaceous concretions—which are principally composed of carbonate and phosphate of lime—occasionally observed in the lungs of man as well as of the lower animals, should not be considered, as hitherto they have been, as being the last modification of tuberculous matter : they are often in the human subject, and very often in the horse, the residue of a small purulent deposit.

8. In several animals there are formed in the lungs certain *verminous* and *glanderous* granulations, which must be distinguished from those of a genuinely tuberculous nature.

9. In quadrumanous animals, and also in birds which have been brought from hot climates to this country, the development of phthisis is found to be at its maximum point of frequency, and almost to the exclusion of other chronic diseases. The same morbid formation is nearly as common in animals brought from an arctic to a temperate climate. We must not forget to take into account the change of diet at the same time, as having no inconsiderable influence in both sets of cases.

10. Phthisis is of rare occurrence among domesticated solipedous animals, and is still rarer among carnivorous quadrupeds and birds. Yet, in spite of the preservative effects of a strong constitution and of an animal diet at the same time, tuberculous disease is found frequently to affect the lions, tigers, &c. that are kept in our menageries.

11. Among the carnivora, the dog, and among the solipeda, the horse, is less subject to tubercles than to cancer—a disease which used to be regarded as peculiar to man.

12. Among ruminating animals, and specially in the cow tribe, the presence of phthisis is often associated with the existence of hydatids ; but there seems to be no relation either as to transformation or succession between hydatids and tubercles.

13. The fatty degeneration of the liver indicates usually the presence of phthisis in man, and of general obesity in birds.

14. The alteration of the bones, which we observe in monkeys affected with tuberculous disease, appears analogous to the swelling and spongy softening of the bones in scrofulous phthisical children. Similar changes have been noticed in the bones of some of the carnivora, which have been brought from hot climates to this country.

15. If the frequency of pneumonia and the rarity of phthisis in the domestic dog seem to contra-indicate any relation between these two diseases, it is not so in the cases of milch-asses and cows: for in these animals the deposition of tuberculous matter is almost invariably co-existent with a progressive chronic pneumonia.

16. Phthisis is unquestionably hereditary; but it is almost never congenital, even in its earliest or rudimentary state.

17. In phthisical persons, the semen, contained in the vesiculæ seminales, is found to contain few or no spermatic animalculæ.

18. The ulcerations of the larynx, trachea, and bronchi have not the significance in man as they have in the lower animals. In the former, their existence is almost always a sign of pulmonary phthisis—occasionally of syphilis; in the quadrumanous tribe of a general tuberculous affection; and in solipedous animals almost invariably of glanders.

19. When pneumo-thorax exists in a case of phthisis, spots of mouldiness have been known to form on the altered pleura, as they have been sometimes observed in the air-sacs of birds affected with tubercles. In all such cases the formation of these vegetable matters is a *secondary* phenomenon.

M. Rayer, at the close of his memoir, alludes in a particular manner to the influence of captivity and domestication on the production of tuberculous disease among the lower animals. This cause may be aptly compared to the influence of imperfect and unwholesome nourishment and of impure residence, the prolific causes of phthisis in man.

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#### DEVELOPMENT OF CRYPTOGAMÆ IN THE BODIES OF ANIMALS: TREATMENT OF TINEA.

MM. Rousseau and Serrurier, in a memoir on the diseases of the organs of the voice, which they communicated to the Academy in 1839, stated that, in a parrot which had died of laryngeal and pulmonary phthisis—a common disease in tropical birds—they found, between the intestines and the vertebral column, a sort of false membrane, on which there was a greenish pulverulent mouldiness, so light and so feebly adherent, that it might be blown away with the breath. They have observed a similar phenomenon in the bodies of some of the mammalia and once also in a tortoise.

M. Deslongchamps has more recently confirmed the complete accuracy of the statement.

M. Dumas mentioned that Dr. Gruby, after long examination of the subject, has come to the conclusion that one of the varieties of *tinea*, the *t. favosa*, is owing to the development of a vegetable formation under the epidermis, similar to that produced by the fermentation of yeast, and to what has been occasionally found in saccharine urine.

M. Schoenlen, of Berlin, had anticipated Dr. Gruby's observations, having published a paper on the same subject in Müller's Archives, some time before.

(It will be observed that M. Rayer alludes to the occasional occurrence of mouldiness in the neighbourhood of diseased tissues in the preceding article.)

It would certainly seem that there is something peculiar in the ætiology of

such a disease as tinea. It is often so entirely local, and seemingly so completely unconnected with constitutional derangement—although most cutaneous diseases unquestionably are—that we should not be at all surprised to learn that it is caused by the development of certain entozoa, whether these be of an animal or of a vegetable nature.

To pass, however, to the treatment of tinea, we must caution our readers never to allow themselves to be misled by the reports of rapid cures alleged to have been effected by this or by that remedy. We firmly believe that no plan of treatment can “jugular” (to use M. *Bouillaud's* phrase,) the disease; for it seems to have a certain course to pass through, or, at all events, the affected parts seem to require a certain time before they recover their healthy state. After having the hair closely cut, and the parts well cleaned and softened with poultices, &c. the application of a solution of the sulphate of zinc, or of copper—the strength of the solution varying according to the effects produced—is one of the best remedies we know. An oil-skin cap should always be worn, as the parts are thus readily kept moistened, without a frequent renewal of the lotion. On the whole, we prefer fluid to unctuous applications; they are more cleanly, and we can more easily watch their effects.

Some ointments, however, are in many cases decidedly useful: that made with the ioduret of sulphur is a good one; a mixture of equal parts of sulphur and of golden ointment is also very useful occasionally.

The great objection to the nitrate of silver, is that of discolouring the integuments, so that we cannot judge of its action, until the cuticle comes away. A weak solution of the corrosive sublimate, the black-wash, Goulard lotion, &c. are all occasionally useful. It is generally well to soften the scalp well during the night with any simple unctuous application, such as pure hog's-lard.

The state of the secretions from the bowels and kidneys should be always punctually attended to. We are very partial to the daily use of small doses of the sulphate of magnesia, and of the nitrate or of the sulphate of potash, in the infusion of roses, to which the vinum colchici and tinctura lyttæ may be added. All constitutional irritation is thus removed, and a derivation, so to speak, is caused to the bowels and kidneys by the use of the remedy, if continued for two or three weeks at a time.

The state of the cutaneous functions, too, should not be neglected: the daily use of the tepid affusion over the head and body can never do harm, and will often tend to accelerate the cure of this as well as of many other diseases of children.

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#### OXALIC ACID A REMEDY IN MUCOUS INFLAMMATIONS.

At the scientific meeting recently held at Turin, M. *Nardo* communicated the results of various experiments made during the last twelve years with this salt. According to his observations, it possesses antiphlogistic properties superior to those of all other vegetable acids, and has at the same time a peculiar sedative action in allaying the severe pains which generally attend inflammation of the mucous membranes, as in the various forms of angina, gastritis, aphthæ, &c. The dose of the acid should be about one decigramme (a grain and a half!) dissolved in any simple vehicle. M. *Nardo* has seen the most satisfactory results in the aphthous affections of children from the judicious administration of oxalic acid, either alone or combined with peppermint or some vegetable astringent: he considers it to be a contra-stimulant sedative.—*Journal de Chemie*.

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## TINCTURE OF CREOSOTE.

Take of Creosote . . . . .	24 grains.
“ Alcohol . . . . .	4 drachms.
“ Tincture of Cochineal . . . . .	2 drachms.
“ Peppermint Oil . . . . .	12 drops.

This tincture forms an admirable remedy against the pain of toothache in many instances, if a piece of cotton moistened with it be applied upon the decayed tooth. A few drops of it mixed with water makes an excellent lotion for preserving the gums in a healthy condition.

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M. ORFILA ON THE ABSORPTION OF CHEMICAL SUBSTANCES INTO THE BLOOD, &c.

During the last two or three years, we have repeatedly called the attention of our readers to the very interesting researches of the distinguished toxicologist of Paris relative to the absorption of certain metallic salts, more especially those of arsenic, antimony and copper, into the animal system, and the means of detecting their existence in various organs of the body after death.

We learn from the following letter, addressed by him during last April to the Academy of Medicine, that he has been prosecuting his inquiries on this hitherto imperfectly examined point of pathological and physiological science; and we earnestly recommend all practical men not to neglect a diligent acquaintance with such subjects, as it is far from being improbable that the therapeutic action of many active medicines may become much better understood, and thereby the practice of physic be improved, by the discoveries of modern chemistry.

“The following results I have obtained,” says M. Orfila, “from a great number of experiments, the details of which will shortly be published.

“1. The diluted sulphuric, nitric, muriatic, and oxalic acids, are absorbed and may be detected in the urine.

“2. The same acids, even in their concentrated condition, are also absorbed; but this probably occurs after their becoming blended with the watery juices of the stomach and bowels, the secretion of which is increased by the contact of such stimulating agents.

“3. The absorption of the salts of lead, bismuth, tin, zinc, gold and silver cannot be disputed, seeing that we find in the liver and also in the urine of animals, which have been poisoned with those substances, the metals which form their bases. All these metals are discoverable by the same analytic process; viz. carbonising the viscus with strong nitric acid, and treating the residue with aqua regia or with nitric acid.

“4. The salts of mercury also are absorbed and carried by the blood into all the viscera of the body. To prove this, we have only to treat one of the viscera of an animal, which has been poisoned with a mercurial salt, with aqua regia, and to pass through the solution thus obtained a current of chlorine gas; or what is still better, to carbonise the viscera with a strong acid in a closed vessel, and to treat the residue with boiling aqua regia.

“5. I have also detected in the viscera—more especially in the substance of the liver and in the urine—traces of the sulphuret of iodine, of nitrate of potash, of alum, of ammonia, and of sal. ammoniac.

“The results now stated complete the suite of researches which I proposed to undertake on the subject of the absorption of poisonous matters derived from the mineral kingdom; they serve to establish beyond all doubt the correctness



of the views which I explained in my former communications relative to the absorption of the salts of arsenic, antimony, and copper."—*Gazette Medicale*.

*Remark.*—This subject of the direct absorption of metallic salts and other chemical agents into the system, and the penetration of all the organs of the body with them, deserves especial notice from all the practical physician as well as from the medical jurist.

#### HINTS ON THE MANAGEMENT OF INFANTS.

There is so much good sense in a great part of M. *Donné's* work that we have been tempted to make several extracts from it, or rather to put upon paper our own ideas on the same subjects, and blend them with those of our author. There may be no novelty in them; but they are not for this reason the less useful.

Let us, for the present, take one point connected with the *feeding of infants*.

Whatever be the age of the infant, it is always of great utility that the food be given at regular periods, as nearly as possible equi-distant from each other, so that the stomach of the young creature is neither left too long empty, nor oppressed and unnecessarily loaded. A sufficient interval of time must therefore be allowed to elapse after each repast, to enable it to be digested and then discharged from the stomach before another be given. To put fresh food into the stomach, while it is still more or less filled with what had been taken before, is inevitably to disturb the process of assimilation, by which the food is converted into chyle for the nourishment and growth of the body.

Now this very simple circumstance—so simple that the experience of daily life dictates it, and withal so important that the health cannot be maintained without due attention to it—is, strange to say, very seldom attended to in the rearing of infants. How generally do we observe that, instead of giving food to them only at regular and stated periods, no sooner do they begin to cry, than they are immediately applied to the breast, although perhaps not half an hour had elapsed since they had had it to their little heart's content. It surely needs not the authority of a medical man to assure any one that such a practice cannot be wholesome or right.

We might derive a useful lesson on this point by watching the conduct of the lower animals towards their young. We do not, for example, observe that the cow will allow the calf, or the sheep the lamb to be tugging at the teat, whenever the young creature seems to wish it. It is only now and then, and at certain intervals, that they are allowed to satisfy themselves with the "milky food." We may be assured that nearly the same law applies to all animals, and that what holds good in the case of the calf and of the lamb holds good of the human infant also.

In one respect only have the dumb creatures in our fields the advantage over us, and it is this: with them, *instinct*—that truly marvellous gift of an all-wise and beneficent Creator—is an unerring guide, while man's boasted *reason* is, alas! often either asleep, or is leading him astray.

But it may be asked, how often then should the infant have the breast? The following few directions will, we think, suffice to direct our readers on this very important question. The younger that the infant is, the more frequent is the desire, and necessity for food. During the first weeks of life, the breast may be given every two hours or so in the day—less frequently at night. As to the quantity which the child should have at each time, the nurse will, as a general remark, find that it may be allowed to continue sucking until it is satisfied. When once this is the case, all that is given afterwards, is only oppressive to the stomach; and it is well known that the little creature usually gets rid of the

superfluity by bringing it up. When the child is very weak, it may be necessary to give the milk more frequently and in smaller quantities at a time; but in ordinary cases an interval of about two or three hours should be allowed to elapse between each meal.

The child should, however, seldom be awaked for the purpose of giving food. It is an old saying, that "a sound sleep is almost as nourishing as a full feast;" and the remark is especially true of infants. They require a great deal of sleep, and they are always refreshed and strengthened by it. As long as a child sleeps, we may rest pretty well assured that Nature does not need any fresh supply of food; and therefore to disturb it merely because the regular period, at which otherwise it would have been applied to the breast, has arrived, is not only unnecessary but hurtful. The exceptions to this remark occur very rarely indeed, and then only in the case of infants who are exceedingly weakly, and who should therefore be regularly seen by a medical man, as no general rule can be laid down that will be applicable to all.

It may be worth mentioning that, in not a few instances, the poverty of the nurse's milk seems to have something to do with excessive drowsiness of the infant. Nature appears to endeavour to compensate for the deficiency of nourishment by an extra allowance of repose. In all such cases, therefore, the medical man should satisfy himself most accurately on this point, more especially when the child is suckled by a hired nurse—who, it may be supposed, always tries to make us believe that her milk is both abundant and good. There is a simple rule, which will very seldom misguide us: it is this: if the child does not thrive properly and yet sleeps a great deal, we may feel pretty confident that the food administered is not sufficiently nutritious, and therefore that some change in the diet is necessary.

The frequency of suckling should be diminished after the sixth or seventh week, or even earlier in the case of robust hearty children. Once every three hours is then quite sufficient, provided the milk be duly nourishing and the infant be allowed to satisfy its craving at each time. At the end of the third month, the breast need not be given oftener than every four hours; and so on successively, an extra hour being added to each interval after every additional month or six weeks of life. By following this system, not only is the health of the infant best consulted, but the convenience and comfort of the nurse will be greatly promoted.

How many a mother, from an overflowing affection, devotes almost every hour of every day to watching over her beloved child! She is unwilling to leave her home for even a few hours, from fear of it suffering for want of the breast while she is away. Now this is just one of those errors, which it is the leading object of *M. Donn 's* work to endeavour to get rid of, both for the mother's and the child's sake. If the latter be accustomed from its birth to have food only at stated regular times, it is altogether better in every respect that in the intervals the nurse be away, and the child be left in the care of another person. We have already explained how much the condition of the milk is affected by the state of the general health, and how necessary it is for the maintenance of this, that the nurse should take regular out-door exercise, and that her mind be kept in an equably cheerful state. Now, how can these advantages be obtained, if she be continually from morning to night with her child? Another great evil of the nurse being too much with the infant, is that the latter, by the mere smell of the milk being constantly presented to it, is often induced to desire food when it certainly does not require it, and when, therefore, it would be much better without it.

This, it has always appeared to us, is one of the greatest disadvantages attending the nurse being too much with the infant—at least until it has been accustomed not to seek for the breast, except at stated intervals. And Nature

is so flexible at this early period of life that this most desirable end may easily be gained by adopting a judicious plan from the commencement.

#### PHYSIOLOGICAL LAWS OR MAXIMS.

A second edition of Baron *Michel's* Translation of Professor *Mejon's* "Physiological Laws,"—a work which, on its first appearance in Italy, received the high commendation of *Scarpa, Mascagni, Tommasini*, and *Borda*—has been published a few months ago in Paris. That our readers may judge for themselves of its contents, we have selected the following "Laws" on the important functions of Digestion, Circulation, and Respiration. They are correct as far as they go, but but are very far from exhausting the subjects of which they are intended to give a condensed summary.

A useful work might certainly be got up by making Professor *Mejon's* one the basis on which to build a series of more extended remarks.

#### *On Digestion..*

1. The existence of a central organ for digestion is one of the most essential characters of animal life.

(This is certainly a distinctive feature of animals—the existence of a central sac for the admission and digestion of the food. The very lowest of the Zoophyte tribe have it ; and indeed the whole body of these creatures is little else but a stomach provided with a single opening. No plant, as far as we know, is similarly organised : their food seems to be invariably absorbed by the minute vessels of their extremities, and is never received into one single cell or sac.)

2. Every animal requires, for its sustenance, to introduce into its digestive organ, at certain intervals, some substance capable of affording nourishment to it.

3. For any substance to be fitted for the nourishment of animals, it is necessary that it should be of an organised structure itself, that it be soluble in the juices of the stomach, and capable of furnishing the elements of chyle.

(We here observe another important mark of distinction between animal and vegetable life ; the one requires matter which has been already organised for its food, while the other derives its nourishment exclusively (perhaps) from inorganic matter.

One great end therefore served by plants, in the wonderful economy of the creation, seems to be to transmute and prepare the materials of the earth as food for animals. We know of no mineral or unorganised substance that any animal can live upon. We read, indeed, of savages eating clay and earth ; but then this is merely to satisfy the cravings of hunger, when they cannot procure regular food, or it is the effect of a diseased appetite, such, indeed, as we not unfrequently meet with in some cases of chlorosis. On the other hand, matter must always (probably) be in an inorganic condition to serve as food for vegetables. It may be imagined that, in some instances, as in that of the *Dioncea Muscicapa* or Venus' fly-trap, plants seem to derive their nourishment from animal substances ; but this is very doubtful. It is more than probable, that these very substances must first be decomposed into their elementary constituents before they can be used as materials for nourishment to the plant. This then seems to be the series of changes undergone by matter : the earth, the air, and the water are absorbed by plants, and serve as food to them ; by the wonderful chemistry of vital action, they are subsequently transmuted into the various products of vegetable life : these products supply the food of the greater number of animals, and these again become the prey of other animals, which are carnivorous. All the excretions of animals are already inorganic matters ; and even

their bodies, when left to slow decay, are gradually resolved into a few elements, which belong to the mineral kingdom.)

4. Food cannot nourish or repair the waste of the body, until after it has undergone the action of the digestive process, and its materials become assimilated to those of the body itself.

(We cannot wonder much at this, when we consider that no mineral substance agrees in its composition with any vegetable substance, nor yet any vegetable substance in every respect with one that is animal. Some vegetable and animal substances, indeed, are very nearly alike in their composition; they consist of the same elements, but then these elements are combined in different proportions. Even in the mineral kingdom we find that a somewhat analogous law exists. All the atoms of a crystal, for example, are essentially and entirely alike; and never do we find the particles of a different arrangement—although their elements be the same—combined together in a regularly formed salt.)

5. Vegetable substances require a much more laborious digestion on the part of the stomach and bowels, to fit them for nourishment than animal substances.

(This is what we might expect; vegetable substances approach much nearer to the constitution of mineral inorganic matter than animal substances do, and we may therefore, *a priori*, suppose that they must undergo a greater change before they can be assimilated with animal bodies. Hence we find that the digestive canal in the herbivora is of much greater length than it is in the carnivora.)

6. Substances which are entirely destitute of azote.—such as oil, gum, sugar, &c.—cannot by themselves serve as food for animals, at least for those which are carnivorous.

(Every one has heard of the experiments of Majendie on this subject: the animals, when fed with these substances alone, quickly pined, and died of atrophy.)

7. Before any animal substance can be digested it must have lost its vitality.

(The same may be said of vegetable substances. Indeed the very nature of digestion implies a complete separation of the component parts of any substance that is used for food. Milk is perhaps the article that undergoes least change; and it is well known how nearly this fluid approaches in its character and composition to chyle.)

8. Animals, that are fed with farinaceous and other vegetable substances, are generally much fatter than those which live upon flesh.

(The chemical composition of all fatty matter approaches much nearer to that of vegetable substances than other parts of animal bodies. It contains a very large proportion of carbon and very little azote; whereas muscular fibre contains much less of the former, and more of the latter, element.)

9. All hoofed and horned animals are herbivorous.

10. The sensations of hunger and thirst are felt whenever the stomach is empty. They are more imperious in youth than in age,—because the body requires more food in early years for its growth—and in all animals that have much exercise than in those which are inactive.

11. External cold and every other influence which quickens the digestive functions, render hunger more intense. In the same manner, whatever induces a great loss of the fluids, increases the desire for drink.

(The ingenious views of the celebrated German chemist, *Liebig*—fully detailed in the present number of this Journal—on the influence of cold air, &c. on the powers of digestion in men and animals, should be attentively studied. He points out with great skill the intimate connexion that exists between the respiratory and the digestive functions, and the beautiful adaptation of the food in different climates to the desires and wants of the resident animals. This is a

most interesting chapter in the harmony of animal life, which had never before been so satisfactorily investigated.)

12. Heat, rest, strong mental emotions, the sight, or even the mere remembrance, of any disgusting object, constipation of the bowels, &c. diminish the keenness of hunger. On the other hand, prolonged hunger speedily enfeebles not only the muscular strength, but also the heat of the body, and the vigour of the intellectual powers.

(On the much vexed topic of the cause of animal heat, we must again refer to *M. Liebig's* work. This distinguished writer advocates the chemical doctrine as to the cause of this vital function, and in the course of his disquisition he shows with great force the influence of the food that is used, and of the atmospheric conditions in which the animal is placed, on the development of the heat of the body.)

13. An animal, in a state of nature, is always led by its appetite to select the food that is best fitted for its sustenance. There exists a constant relation between the kind of the aliments on which the animal lives, and the peculiar dispositions of its gastric system.

14. The form of the teeth has a considerable influence on the digestion of the substances which the animal can subject to mastication.

15. The eruption of the teeth in the child takes place between the first and the fourth years. Usually they are pushed out in pairs, to the number of four-and-twenty in all. From the sixth to the seventh year, the sixteen milk or caducous teeth are successively replaced by others, so that the entire number of permanent teeth amounts to 30 or 32. The milk teeth generally drop out in the order of their eruption from the gums.

16. The configuration and arrangement of the teeth vary much in different animals, according to the sort of food they live upon.

17. In carnivorous animals, the teeth are strong, curved and pointed, for the purpose of tearing and dividing the flesh on which they feed. In the frugivorous tribe they are sharp, flattened, and so arranged as to cut and grind the substances placed between them. In the herbivorous and granivorous tribes they have a cuboid form, and are adapted to bruise the food by their broad uneven surfaces. In man, who is omnivorous, we observe these various forms combined together.

18. The chyme, as it is formed in the stomach, passes through the pylorus into the duodenum, where it is mixed with the bile, pancreatic and intestinal juices, and is gradually separated into chyle and feculent matter.

19. The strength of the walls of the stomach is in general inversely as the development of the masticatory organs, and the facility with which the food is digested. The solvent power of the gastric juice is also inversely as the amount or degree of the other forces which assist in the digestion of the food. The gastric juice in carnivorous animals is very different from that in the herbivorous.

20. In animals, which hibernate during Winter, the process of digestion is altogether suspended during the whole period of their lethargy.

21. The bile in the duodenum combines with the pancreatic liquor and mixes with the chymous pap. These three substances become mutually decomposed. The most soluble and nutritive portion of the chyme unites with a portion of the biliary and pancreatic juices to form the chyle, while another portion of the bile combines with the excrementitious part of the food, which traverses the intestinal canal, loses its chylous juice, and is at length voided as excrement.

22. The irritability and sensibility of the intestinal tube diminish gradually from the stomach downwards to the rectum.

23. The form and nature of the excrementitious matters are nearly alike in different animals of the same species, although they be fed on very different

substances ; while in animals of different species, but fed with the same food, the fæces have always a distinctive character in each tribe.

*The Organs of Circulation.*

24. The size of the heart, compared with that of other parts of the body, is greater in the fœtus than in the born child ; it is also greater in short than in tall persons : ('a little body, but a mighty heart.')

25. The capacity and force of the heart are, in proportion to the rest of the vascular system, greater at the beginning than at any other period of life.

26. The heart is proportionally larger and stronger in bold courageous animals than in those which are feeble and timid : it has greater energy in the carnivorous than in the herbivorous tribes.

(A long chapter might be written on this subject. How the very language of all nations bears witness to the truth of the observation that the force of the mind and will has something to do with the state of the circulation : a strong heart, a bold heart, a faint heart, and such like, are daily expressions everywhere. No man can possibly be thoroughly courageous in danger, unless his circulation remains tranquil and little moved all the while. True it may be said that the corporeal condition is the result of the mental. This is certainly true ; but let it be observed at the same time that, with a little tact and management, a person may succeed in maintaining extraordinary courage in circumstances of the most appalling danger, if he will but attend to the state of his breathing, so as never to allow this to flag or to go on feebly and irregularly. If every now and then he will take in a deep breath, or make a strong effort to laugh or sneeze, the heart will be thereby relieved, and the circulation will go on more evenly.)

27. In mammiferous animals the volume and force of the heart are always proportionate to the development of the lungs.

28. The capacity of the ventricles of the heart in warm-blooded animals is always greater than that of the auricles. The reverse is the case in cold-blooded animals.

29. In proportion as the arteries recede from the heart, their diameter diminishes, and their number increases. The entire capacity of the arterial system increases as it is distant from the heart ; for the sum of the diameters of all the arterial ramifications much exceeds the diameter of the common trunk.

30. The arterial, as well as every other, tissue becomes more indurated as the animal advances in life.

31. The contractility of the arterial parietes is proportionally greater in small than in large animals.

32. The arteries contain more blood than the veins in the early years of life, and less in middle and advanced age. There is an arterial plethora, as long as the superiority of the forces over the resistances continues ; but, when the rigidity of the solids begins to be established, there is a plethora of the veins gradually established.

33. The capacity of the entire venous system is greater than that of the arterial.

34. The capacity of the veins is in an inverse ratio with the celerity of the fluid that permeates them.

35. The quantity of the blood, which is distributed to all the parts of the body, varies at different periods of life. It is, relatively to the volume of the body, more considerable in infancy than in adult age.

36. The vessels of the head receive, in proportion to the rest of the body, more blood in the early than in the late years of life.

37. When the body has attained its full degree of development, the quantity of blood in the veins increases constantly in a direct ratio with the diminution of that in the arteries.

38. During embryonic life, there is no apparent difference between the arterial and the venous blood.

39. In the human fœtus the blood does not contain any phosphatic salts: after birth, however, they exist in it: it is also found to contain then more hematosine, to acquire a brighter red colour, and be more coagulable than it was before. At the age of puberty the blood is warmer, and has a spermatric odour, somewhat like that of the sweat of the animal. In the adult, it has more consistence, and is richer in fibrine than in the youth; and in old age, it becomes paler, and has a great tendency to form different sorts of coagula or concretions. The proportion of the cruur to that of the serum is generally inversely as the age of the person.

40. The characters of the blood differ much in different classes of animals. It is more or less red in all animals which have a bony skeleton; yellow or whitish in insects and in most of the mollusca; and watery and transparent in zoophytes. In birds it is usually redder, warmer, less serous, and more coagulable than in mammals. In reptiles and in fish it is very serous, but does not readily coagulate, and is much disposed to become oily: its temperature too is but little above that of the air or water in which the animal lives.

41. In all warm-blooded animals, the circulation is found to be the more rapid, the sooner after birth that it is examined; and the rapidity gradually becomes less and less as life advances.

42. The arterial pulsations in the mother and in the fœtus are independent the one of the other; they are certainly not isochronous, although there is such an intimate relation between the existences of the two beings.

43. During the arterial circulation, the blood loses successively more and more of its albuminous and fibrinous nutritive ingredients, as well as of its heat, and becomes charged with hydrogen and with carbon: then it becomes venous.

#### *Of the Respiration.*

44. Respiration takes place in all animals without exception; it is effected however in very different ways, and with different degrees of activity in different tribes. The contact of the air is indispensable to every animal; for even those, which live constantly in the water, find in it a certain quantity of air, sufficient for their existence.

(Of late years it has been discovered that plants will live for a great length of time without the renewal of fresh air. It has been found that, if the pots in which they grow be covered with a bell-glass hermetically secured round them, so as quite to exclude the atmosphere, living plants may be brought over from India to this country without risk, so that, when transferred to our hot-houses, they will thrive perfectly. How long animal life will continue under such circumstances is not easily ascertained. We read of frogs, &c., having been found imprisoned in trunks of trees, &c., where they must have remained a length of time, without losing their vitality.)

45. All animals, which have a heart or central organ of circulation, respire by means of a particular apparatus; and this apparatus has always an intimate and reciprocal relation with the organs of circulation.

46. In all animals, in which the respiration is localized, the special organs for the performance of this function have a fine vascular structure, which is spongy and capable of presenting to the air an extensive surface. In the mollusca, crustacea, and the red-blooded worms, the respiration is effected by means of circumscribed bronchia. In fish, the central apparatus of respiration consists of two aquiferous bronchia, and in insects by tracheæ over every part of the body. In the true zoophytes, the medusæ, and the polypi, the whole of the body seems to act as a respiratory organ; no special apparatus is discoverable.

47. In general there is an exact relation between the activity of the respiration and the energy of the other functions, as the circulation, the digestion, &c.

48. Amphibious reptiles and serpents have the power, by reason of their

peculiar organization, of suspending at will their respiration, without stopping the circulation of the blood.

49. The lungs of warm-blooded animals are passive in the act of inspiration, but they aid the movement of expiration by a power which is proper to them.

50. Whatever quickens the circulation, increases the rapidity of the respiratory movements. There is in general a very marked relation between the quantity of oxygen absorbed during respiration in a given space of time, and the vivacity of the movements of the animal.

51. In the adult human being, the respiratory movements vary from 18 to 24 in the minute—or in the ratio of about one movement to every five beats of the pulse.

52. In mammals and in birds, the nature of the respiratory movements has much to do with the expression of their voices—their cries, their singing, their yawning, &c.

53. The quantity of oxygen absorbed by the blood during respiration is greater during Winter than during Summer.

(This must necessarily be the case when the air is cold, and therefore dense—provided the number of the respirations continue about the same. Now the greater amount of the oxygen absorbed requires a greater quantity of carbon, derived from the food, for its combustion or combination within the body. Hence there must be a greater amount of caloric developed. It is by following out this chain of reasoning in a variety of ways that M. *Liebig* has succeeded in throwing not a little light on some of the most disputed points of physiological science.)

54. Animals after eating absorb more oxygen during respiration than when they are fasting. The consumption of oxygen is in proportion to the need which the constituents of the blood have for combining with it.

55. In birds, the inspired air is received into a multitude of vesicles, distributed over different parts of the body. This arrangement not only renders the weight of their bodies much less, but also forms a reservoir for the purposes of breathing in very elevated regions of the atmosphere.

(It has been clearly made out by recent aeronautic experiments that the breathing is by no means so much embarrassed at very great altitudes, as was formerly supposed—provided no bodily exercise be taken at the time. In the various ascents of Mr. *Green* of late years, we have not heard either of him or of any of his companions suffering much from inspiring the rarified air at great heights in the atmosphere. A good deal therefore of the distress, so often experienced by travellers who have ascended very high mountains, must be attributed to the effect of bodily fatigue.)

56. Birds consume, in a given space of time, much more oxygen, in proportion to the size of their bodies, than quadrupeds do: this is in part owing to the rapidity of their respiratory movements.

57. Among the many purposes of respiration, one of the most important is to invigorate and renew the force of the muscles, by restoring to their fibres their exhausted irritability. It is found that the motive energy, as well as the general vital activity, in different animals, are exactly proportionate to the rapidity and force of their breathing.

(This remark is quite true of animals of one class, but certainly not of different classes of animals, compared with each other. For example, the strength and activity of most fishes are surprising, especially when compared with many warm-blooded animals; and yet their respiration is, so to speak, much more imperfect than in the latter. We might allude also to the wonderful muscular strength of many insects, especially of the coleopterous kind.)

58. The less that the respiration is fitted to restore the irritability of the animal fibre, the greater is the tenacity of the fibre in retaining this property.

(The truth of this remark is strikingly exemplified in the case of most rep-



tiles, whose flesh it is well known, continues to exhibit contractility for a long time after death; while that of warm-blooded animals scarcely survives life.)

59. Those warm-blooded animals, which hibernate during certain seasons, are nearly in the same condition as animals having cold blood, in relation to the quantity of oxygen consumed during respiration.

#### ACCOUNT OF THE DEATH OF THE DUKE OF ORLEANS.

This most melancholy event has excited so much sympathy and interest among all classes, not only in France itself, but in this and in other countries, that a brief account of the circumstances connected with it will be read, we doubt not, with interest by every one. The accident was a very frightful one, and the report of it is interesting in a mere surgical point of view, as showing what amount of injury may be caused by a fall from a vehicle when going along at full speed.

On the morning of the 13th of July, about a quarter after eleven o'clock, the Duke set out for Neuilly to join the King and Queen there, before starting to take the command of the camp at St. Omer.

He was in a low four-wheeled carriage—called a *Daumont*, and which is like a large open cabriolet—a groom being seated behind. It was drawn by two spirited horses. On leaving the *Barriere de l'Etoile*, the horses, especially the leader—(were they harnessed tandem-fashion?)—became rather unruly, and the driver gradually lost command over them. Wishing to give himself more space, he turned them to the right into the *Avenue de la Revolte*, which is in a line with the St. Denis road. The Prince, observing him to deviate from the usual route, called out to his postillion; but he, although he heard the Prince speaking, could not distinguish what he said. It was probably at this time that the Prince stood up to see how things were going on. He leaped or was thrown out, and immediately fell, striking his head with great violence on the curbstone. Two gendarmes, who happened to be on the road at the time, and the owner of an adjoining small grocery shop, ran to the spot, and lifted him up. They at once recognised who it was, and immediately carried him into the shop.

While they were carrying him, he vomited the food he had taken at breakfast; this, it is well known, is a common symptom attending injuries of the head. The royal patient was stretched out upon two mattresses on a low bed, in a back room: this was about half-past eleven o'clock. On the first news of the accident, a number of medical men hurried to the spot. *M. Pasquier*, first surgeon to the King, and his son, the surgeon of the Prince, soon arrived: *MM. Blandin* and *Blache* followed almost immediately afterwards. Alas! it was but too evident from the first moment that the case was a hopeless one. We may readily conceive the grief of *M. Pasquier* (the son) who had for many years enjoyed the confidence of the Prince, had accompanied him and never left his side in Africa, and who, before being appointed his surgeon, had been his instructor in medicine. For the King, who has always wished that the education of his sons should be very complete, had made the Prince—then Duke of Chartres—study anatomy, physiology, and a little of surgery.\* For six months he dissected, under the instruction of *M. Pasquier*, at the *Hôtel des Invalides*. Perhaps this was one reason why he was always so partial afterwards to military surgeons. He had seen them at their humane labours in the field of battle in Africa, where,

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\* *Louis Philippe* himself studied anatomy, and the simpler operations of surgery, as bleeding, the application of bandages, &c., under *Dessault*.

as everywhere else, they always proved themselves to be, as he beautifully said, "men of science and brave soldiers."

The loss of the Prince to the medical officers of the army will long be deeply felt.

*Revenons.*—The Prince was stretched out on his back, his head resting on his chest, in a state of complete insensibility and muscular powerlessness. A young German did the pious duty of supporting the head of the Prince, during the five hours that he survived. The breathing was deep, slow, and laborious; the pupils were dilated and unaffected by light; and the mouth and ears contained some blood. The pulse was small, thread-like and compressible. On examining the head, no depression or irregularity could be felt; but it was too apparent that irreparable mischief had been done to the encephalon, and that the case was one of cerebral commotion of the third and last degree, in which scarcely a single hope of recovery can be entertained. Cooling lotions were applied to the forehead, and vapour of ammonia and other stimulants to the nostrils; but all in vain; not an appearance of consciousness was shown, but every now and then involuntary movements of different parts occurred.\*

It was now about noon; and at this time the King, accompanied by the Queen, *Madame Adelaide*, the *Princess Clementine*, and followed by *Marshall Gerard*, and Generals *Athalin*, *Gourgaud*, *Rumigny*, and *M. Delessert*. The Queen threw herself on her knees at the side of the truckle-bed, where lay her unfortunate son. Never did a mother's grief and desolation break forth in more heart-rending expressions. In the midst of this scene of despair, the King alone mastered his anguish.

The state of the patient became worse and worse. Sixty leeches were applied near the base of the cranium. It was about this time that he uttered a few unconnected words in German.† He tried, too, to tear the leeches off, as if they caused him pain. Sinapisms were applied.

The breathing became more noisy, irregular, and oppressed, and the twitching movements of various parts became stronger. The lower extremities, which hitherto had been quite motionless and flaccid, became affected with a general tremor, followed by irregular, convulsive contractions. Gradually these movements became less frequent, and at length ceased, leaving the parts in a state of almost tetanic rigidity. The breathing became more and more stertorous, and the pulse became more feeble than ever.

During the whole of this time, the Queen was kneeling at the side of the bed, supplicating the Almighty to grant her dying son one moment of consciousness, and offering her own life as the price of such a mercy. Around her stood the members of her family, in a state of the most distracting despair. The grief of the young Dukes, *Montpensier* and *d'Aumale*, was most affecting; the latter constantly exclaiming, "Oh! when *Joinville* hears of this!" The King looked on this scene of affliction with a resignation which was even more touching than the louder sorrow of the rest.

*M. Pasquier* applied the cupping-glasses—*scarifiées et seches*—on the trunk,

\* These movements had taken place some time previously, after a bleeding that had been performed before the arrival of *M. Pasquier*. The propriety of such a practice in cases of violent commotion of the brain is more than questioned by the best surgical authorities: it must necessarily increase the already existing depression of the vital energies.

† The words could not be made distinctly out. It may be that the image of his wife visited his thoughts in this hour of darkness, or that he was calling to one of his German valets, who were in the habit of waiting upon him, and whom he was in the habit of addressing in their own language.

and limbs; and hot sand was applied to the soles of the feet, and sinapisms to the ankles. The pulse rose somewhat for a few minutes; but this slight change soon ceased. At two o'clock, the curate of Neuilly, whom the Queen had called for repeatedly, arrived to administer extreme unction to the dying Prince.

The convulsive movements of the limbs became gradually more violent; the muscles appeared to be affected with a continued spasmodic agitation. The breathing became more and more difficult, the pulse at the wrist ceased, and that of the carotids could, about three o'clock, scarcely be felt. All the usual symptoms of approaching death—the pale visage, the purple lips, the half-closed fixed eyes, the rattling breath—succeeded. More than once it was thought that the prince was dead; at length one deep sighing inspiration was heard, and all was over. This was at half-past four o'clock.

The clergy were introduced, and all present fell upon their knees. Never was there a more impressive scene. In a poor back room of a small grocer's shop were to be seen the King and Queen, the Princes and the Princesses, of France, with the ministers of state and of religion, all kneeling around the humble bed on which lay the corpse of him who was the heir to the throne, while the clergyman repeated in the prayers for the dead. It was difficult indeed to say which was the most affecting of the two; the sobbings and tears of the broken-hearted mother, or the silent scarce-restrained grief of the father, in this most trying moment of deepest affliction.

*Autopsy.*—This was performed by M. *Pasquier*, the son, forty hours after death, in the presence of General Baron *Athalin*, first aide-de-camp of the King, and the following medical men, MM. *Fouquier*, first physician to the King, *Pasquier*, *Moreau*, *Blache*, *Blandin*, and *Destouches*. There were marks of a contusion on the right cheek and right side of the forehead, also on the back of the left hand, on the front of both knees, and on the left hip. There was a broad sanguineous swelling over the back part of the head.

*Cranium.*—The integuments being divided from before backwards along the median line, the soft parts over the occiput and thence to the forehead and temples were found to be infiltrated with blood: the infiltration was considerable in the posterior portion of the occipito frontalis muscle. The two flaps of integuments being folded down on each side, the saw was applied in the usual place, and the cranial bones divided. The violence of the blow, with which the head came against the ground, must have been extreme, as we may judge from the severity of the injuries inflicted. The lambdoidal, the left squamous and mastoid, the sphenoid, and the two speno-petrous sutures, were all partially disunited. The cranium was fractured in numerous places. One fracture, beginning at the right side of the lambdoidal suture, passed a little above the posterior and inferior angle of the parietal bone, and extended into the temporal fossa, as far as the great *ala* of the sphenoid. Another, starting from the left side of the same suture, divided the parietal bone, from behind forwards, along one-half of its length, and had also separated the squamous portion of the temporal from the rest of this bone. The squamous suture being disunited, this portion of the temporal bone was quite isolated, and adhered only to the soft parts. A third fracture divided in a transverse direction the sphenoid bone on the level of the sella turcica.

On removing the calvarium, the anterior and inferior portion of the cerebrum, as far back as the fissures of Sylvius, was found reduced to a reddish pulp or *detritus*. There was much sanguineous effusion under the arachnoid membrane: a few drops also of bloody serosity were found in the ventricles. One of the optic nerves was fairly divided across. All the other organs of the body were perfectly sound, with the exception of the lungs, which were so much gorged with dark blood that their tissue almost resembled that of the spleen.

## Clinical Review.

### UNIVERSITY HOSPITAL.

A CASE OF ANEURYSMS WITHIN THE SKULL, TERMINATING IN APOPLEXY AND PARALYSIS; WITH CLINICAL REMARKS. By A. T. THOMSON, M.D.\*

John Morgan, æt. 49, of intemperate habits, was admitted into University Hospital on the 18th of January, 1842. It was impossible to obtain a correct history of his health, prior to this attack, but from the account obtained from his landlady, it appeared that some months prior to admission he had fallen in the street when tipsy, and cut the back of his head; since that time his manner was changed, he became garrulous, silly and very irritable; a very small quantity of spirits would now make him tipsy.

On the morning of the day on which he was admitted, he felt unwell and remained in bed; in the afternoon he was found insensible, with his head hanging over the side of the bed. He had vomited a quantity of dark-coloured, somewhat stercoraceous fluid. He was sent to the hospital, about seven o'clock, p. m. in a comatose state. Pulse at the wrist scarcely perceptible; breathing laborious; left side of the body paralyzed, both as to sensation and motion. Mouth drawn to the right side. Right pupil more dilated than the left. Feet cold.

Soon after admission he was cupped and had a blister applied to the nape of the neck, the body was wrapped in blankets, an enema administered, and four grains of calomel with one of croton oil given as soon as possible after the enema. After the purging had ceased, he was ordered to take a four-grain calomel pill every fourth hour.

On the following morning sensation returned, but motion remained as before. Pulse 92, soft. Convulsive twitches of the mouth, and of the right arm and hand; and he could not protrude his tongue. To be cupped again on the temples, and to repeat the pills. He was also directed to take grs. v. of the sesquicarbonate of ammonia every 4th hour. Ice to the scalp.

This plan of treatment was pursued till the 25th, when he felt better. The head was cooler, the extremities of a more natural temperature. On the 27th, however, he became worse again, the pupils, especially the right, much dilated; breathing laborious; paralysis of motion continued, but the sensation was perfect on both sides.

On the morning of the 28th, the breathing was more laborious, the mucous râle louder. Extremities extremely cold; pulse at the wrist imperceptible. He died at a quarter of an hour past 12 o'clock, p. m.

*Examination 26 hours after Death.*—The liver adhered anteriorly to the diaphragm; it was soft, easily torn, of a dark red colour, and presented at its anterior margin several yellowish granular masses. The lungs were partially adherent on both sides; the left heart slightly hypertrophied, but the valves were healthy. Kidneys small and granular. Stomach healthy.

*Brain.*—Vessels of the dura mater much gorged; pia mater vascular, especially on the left side; arachnoid opaque, with deposit of lymph on the left side. There was discoloration of the anterior lobe of the right hemisphere; and a patch of extravasated blood, about two inches in diameter under the right parietal

\* London and Edinburgh Monthly Journal, July, 1842.

bone, and beneath the pia mater; there was also a smaller patch of a similar description on the left hemisphere. About two ounces of bloody fluid at the base of the brain. Middle and anterior lobes on both sides adhering by false membranes at the base. The arachnoid was opaque in that situation, and an aneurysm, a little larger than a hazel-nut, was found on the trunk of the carotid, where it gives off the arteria cerebri media, and another small one on the curve of the artery. The right portion of the circle of Willis was wanting. On the same artery of the opposite side, there was also an aneurysm, nearly globular; the branches of the vessel going to the anterior lobe of the brain were enlarged, and their coats thickened. The anterior lobe on the same side as the large aneurysm was also softened almost to a pulp. The basilar artery was dilated, besides being white, opaque, and its coat much thickened. The anterior lobe on the opposite side was softer than usual.

*Clinical Remarks.*—The diagnosis as to the cerebral origin of the paralysis could not be mistaken, although the condition of the brain, which had induced the attack, could not possibly have been conjectured. The immediate attack was evidently apoplectic; the imperfect history renders the exciting cause of the seizure doubtful, but it is probable that the fall which the patient had six months before, must have predisposed to apoplexy. It is not improbable that softening had then begun, and was slowly proceeding. There was, however, no doubt that the commencement of both the apoplexy and the paralysis was simultaneous; that extravasation had taken place was rendered probable from the form of paralysis being hemiplegia. In this case there was serous effusion at the base of the brain, but none into the ventricles—owing evidently to the state of the cerebral vessels, and the termination of inflammation of the meningeal coverings of the brain.

The coagulable lymph thrown out upon the left hemisphere was much greater than that upon the right; this is to be accounted for by the obstruction of the supply of arterial blood to that hemisphere, owing to the large aneurysm: on which also, probably, the softening depended.

In reviewing the case, there can be little doubt that both the apoplexy and the paralysis were the result of inflammation set up in the brain, previously predisposed to take on such a state. This predisposition depended on the derangement of the circulation caused by the fall, and the consequent formation of the aneurysms, a state of things most likely to occur in an intemperate person. It is probable also that the immediate cause of the inflammation and extravasation was drunkenness.

The softening, which existed chiefly in the anterior lobe of the right hemisphere, was the result of the defective supply of blood to that part caused by the large aneurysm. The substance of the left hemisphere was softer than natural, arising also from the state of the vessels. The senses and intellectual faculties were impaired, as usually occurs in the first period of softening, from obstruction of the vessels of the brain. In the second period, the symptoms of inflammatory softening and that from defective circulation or obliteration, are the same. We must regard, in this case, the serous effusions as altogether secondary, the result of the meningeal inflammation.

The case is interesting in a pathological point of view. It adds another to the recorded cases of aneurysm within the cranium; and shows that these aneurysms may attain a large size. It proves moreover that life may be sustained under very considerable derangement of the brain, and that organic changes within the skull are less likely to terminate quickly, than inflammatory action set up in the organ.

With respect to the treatment in the present case, and in every apoplectic attack connected with arterial excitement, the first object is to lessen the impulse of the blood on the cerebral arteries; and if the pulse does not contra-indicate a free abstraction of blood, it should be carried to its full extent. It is necessary also to subdue the torpid state of the bowels; and here Dr. Thomson thinks

that the employment of *elaterium* has been too much neglected in the treatment of simple apoplexy. No other purgative, he thinks, is so likely to maintain the beneficial effect procured from a full bleeding, without that serious depression of power, which a repetition of copious venesection always produces. The calomel was pushed with the view of aiding the blood-letting, and the purging in reducing the inflammatory action. It is, however, unnecessary to comment on the treatment; the prognosis was unfavourable from the commencement, and much experience was not requisite to pronounce that the case would terminate fatally.

### PENNSYLVANIA HOSPITAL.

#### A CASE OF INGUINAL ANEURYSM TREATED SUCCESSFULLY BY A LIGATURE TO THE EXTERNAL ILIAC ARTERY. By EDWARD PEARCE, M.D.\*

John Erwin, aged 28, was admitted into the Pennsylvania Hospital, July 17th, 1841, with inguinal aneurysm on the right side. Four months previously, after a fall received in wrestling, he had severe pain in right groin, which however left him in the course of a few days. Two months afterwards the pain in the groin returned, and he then observed, for the first time, a small tumour of the size of a walnut, which has continued to enlarge, and is accompanied with so much pain as to incapacitate him from walking.

Upon examining the patient in the hospital, a pulsating tumour was found in the situation of the right femoral artery, extending from one inch above Poupart's ligament to three and a half inches below it. The transverse diameter of the tumour was four inches. The skin over the tumour was reddened: deep-seated and severe pain. There was also much pain at the inside of the knee; the whole limb was swollen; sensibility natural except upon the anterior surface of the thigh.

In six days time all signs of local inflammation had disappeared, and the skin had resumed its natural appearance; the tumour had increased rapidly in size, but the pulsation in it was not so strong. It was then determined to tie the external iliac.

July 24th. A curved incision, four inches in length, with its convexity directed towards Poupart's ligament, was made through the skin, commencing an inch and a half above the anterior superior spine of the ilium, and terminating half an inch above the situation of the external ring. The tendon of the external oblique was then divided upon a director, bringing into view the lower edge of the internal oblique and transversalis muscles, which were separated from Poupart's ligament with the handle of the scalpel. The peritoneum was easily raised up, and the artery was felt beating distinctly, but faintly, contrasting strongly with the violent vibration of the tumour. The artery, which appeared healthy, was separated from the vein by the finger nail, and a silk ligature applied, with great facility, as high up as possible, so as to allow sufficient space for the formation of a coagulum above the epigastric artery. The pulsation of the tumour was immediately arrested. The lips of the wound were brought together by two strips of adhesive plaister, and dressed with lint spread with cerate. The operation lasted eighteen minutes.

Six o'clock, P. M. Foot cold and moist, the rest of the limb natural, but somewhat painful. Pulse 74. Ordered Sol. Morph. 3ij.; foot enveloped in carded wool.

On the following day, there was violent pain in the groin, which was relieved by fomentations, and the administration of morphia. Temperature of the right thigh ninety-six, of the left, ninety-three.

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\* Medical Examiner, Philadelphia, April 9, 1842.

July 27th. Both limbs of the same temperature; sensibility natural everywhere, except the last phalanges of right toes, which remain cold. A small red spot at the inner side of the patella is very painful, prominent, and soft; the tumour is also painful and inflamed.

July 28th. Much irritability of the bladder; tumour smaller, less painful. Ordered flax-seed tea, and a large cataplasm over pubic region.

July 29th. Passed a comfortable night, has made water but twice since yesterday; wound suppurating freely; two-thirds of the incision have united by the first intention. Simple dressing to the wound.

The patient continued to improve without any unfavourable symptoms; the tumour becoming smaller and firmer till August the 24th, thirty days after the operation, when the ligature came away, having a large loop.

September 30th. Wound completely cicatrized; tumour half of its former size. The patient walks about the room, and can bear his whole weight upon the affected side.

November 24th. Discharged from the hospital; is able to return to his work. The tumour is now about the size of a walnut.

*Remarks.*—Owing to the rapid progress of the aneurysm, it was not deemed proper to apply pressure above the tumour with a view of dilating the collateral branches, as recommended by several eminent surgeons; and it may well be questioned whether the benefit resulting from dilatation of the vessels which are to nourish the limb, will ever compensate for the greater danger incurred by an increase of the tumour and inflammation of the surrounding tissues. The same reasons may be urged against the recommendation to promote a cure by pressure over the tumour, as exemplified in a case of inguinal aneurysm, treated by Dr. Post, where the patient refused the application of a ligature.

His surgeon then applied a compress to keep up a constant pressure upon the tumour. Under this treatment the aneurysm diminished for a time, but then increased rapidly, while severe pain and considerable local inflammation and tumefaction of the upper part of the thigh supervened. These symptoms were finally relieved by a removal of their cause, and a resort to cold applications and evacuants. When the patient at last submitted to an operation, it was found impracticable to separate the peritoneum, usually so easy, owing to the adhesions that had taken place between that membrane and Poupart's ligament from the previous inflammation. The surgeon was obliged to cut through the peritoneum in order to apply the ligature: consequently the patient was exposed to the additional hazard of inflammation of that membrane. Fortunately the termination of the case was favourable.

In this case, with the exception of the irritation of the bladder on the fifth day no unpleasant symptoms of any kind occurred during the whole course of treatment, which was unnecessarily prolonged by the ligature not having been tied sufficiently tight. This was manifested by the large size of the loop, and it satisfactorily accounts for the retention of the ligature for thirty days.

## LEEDS GENERAL INFIRMARY.

### REPORT OF CASES TREATED BY MR. T. P. TEALE.\*

#### CASE I.—*Strangulated Hernia—Operation—Sac not opened.*

John Midgeley, æt. 69, admitted 14th of March, 1842, with a large strangulated hernia, occupying the inguinal canal and scrotum on the left side. The portion

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\* *Provinc. Medical Journal*, July 2,

of the tumour within the canal feels hard and cylindrical, and is separated from the scrotal portion by a strongly-marked depression in the site of the external ring, which evidently exerts a firm constriction on the tumour, the abdomen is distended and tympanitic.

States that he has had a hernia there for seven years; has never worn a truss, but has always been able to return it himself until the 12th March, when it came down and he was unable to replace it. On the 13th, he had one small fecal evacuation, and occasionally vomited.

The taxis, with the warm bath, having proved unsuccessful, a large clyster was ordered to be given immediately; a bladder containing the "freezing mixture" to be applied over the tumour and two calomel and colocynth pills to be given every two hours.

In the evening, though the symptoms were not urgent, as the bowel remained strangulated, it was determined to operate.

Having divided the skin, superficial fascia, and fascia of the cord, a director was passed under the external ring, which embraced the tumour very tightly, and a few fibres at its upper boundary were divided; after which, by a little manipulation, the protruded parts were replaced within the abdomen, a gurgling sound accompanying their return. The edges were brought together by two or three sutures, over which a compress of lint was applied.

15th. The bowels acted freely two hours after the operation, and the patient felt perfectly relieved. On the following day, on removing the dressings, the wound was found to be united throughout its whole extent.

17th. Erysipelatous blush at the upper extremity of the wound, which has re-opened, and looks sloughy; no tenderness of the abdomen. A strong solution of caustic to be applied to the inflamed skin, and poultice to the skin.

18th. Erysipelas has not extended. Wound discharges freely.

April 15th. Wound healed. A truss, with a large but slightly convex pad, has been applied. Discharged.

*CASE II.—Compound Fracture of the Cranium.—Depression of Bone.—Laceration of Longitudinal Sinus.*

Mary Rushforth, æt. 16, admitted on the 2d of April, with severe injury of the head; having fallen, in an epileptic fit, from a room in which she was working, through an opening in the floor, about 12 feet, into the room below, her head pitching upon the iron rim of a large wheel.

On examination, it was found that a wound of the scalp, three inches in length, extended over the right parietal bone, parallel to and a little behind the coronal suture, terminating a little to the left of the median line. The right parietal bone was fractured, and depressed in the same situation as the wound in the scalp; the depressed bone was broken into several fragments, and its anterior edge pressed deeply upon the dura mater. She vomited occasionally, but was perfectly sensible.

Mr. Teale having applied the trephine in three places, raised or removed the depressed portions of bone; on raising that portion situated nearest the mesial line, it was found that the longitudinal sinus had been wounded, and on removing the bone, a profuse torrent of venous blood flowed over the patient's head. Though the hæmorrhage was speedily stopped by a compress of lint, enough blood was lost to render the patient blanched and faint. The wound was dressed with lint smeared with cerate.

On the following day slight re-action took place, but no symptom of cerebral disturbance occurred. On the 6th, she had an epileptic fit of short duration, after which she was restless, with heat and dryness of skin and quickness of pulse. Wound to be dressed with creosote lotion; pil. cal. cum col. and salines.



8th. Yesterday, at three P.M. she had another fit, which was followed by copious venous hæmorrhage from the wound. A compress of lint was again introduced and retained by a bandage.

10th. Wound looking healthy, except that the dura mater appears to be in a sloughy state, and that there is a tendency to protrusion of the brain. A graduated compress of lint was applied.

17th. Slight hæmorrhage has occurred several times, but has now ceased; she has not had any epileptic attack for several days. Wound looking healthy.

May 14th. Wound rapidly granulating. Has had a slight epileptic attack this morning. To take a fourth of a grain of nitrate of silver four times a day.

June 1st. Wound healed. Discharged.

#### CASE III.—*Strangulated Ventral Hernia.—Operation.*

Richard Morton. æt. 69, of plethoric habit, was admitted into the Infirmary on the 1st of June, 1842, labouring under symptoms of obstruction of the bowels.

He states, that after violent exertion about two years ago, a tumour formed at the left side of the abdomen, which has never since then entirely disappeared.

At five o'clock this morning, he began to suffer from severe pains in the abdomen, with frequent vomiting. He is now much exhausted, vomiting large quantities of black fluid, like coffee-grounds; much perspiration; pulse 118, intermittent; abdomen tender, more especially in the left iliac region, where a flattened oval tumour, about three inches in length is perceptible; this tumour is situated beneath the aponeurosis of the external oblique, which forms a tense and smooth covering of the tumour. The bowels have not acted since yesterday. A dose of cal and col. immediately, and ol. ricini in an hour afterwards. A large clyster to be injected.

The injection brought away a small quantity of fecal matters, but as the vomiting and pain in the abdomen continued, Mr. Teale determined to operate.

An incision was made in the long axis of the tumour, exposing the aponeurosis of the external oblique, which was next divided, when the hernial sac, covered by a rather thick layer of tissue, presented itself. On opening the sac, a coil of large intestine, highly vascular, and a small portion of omentum were exposed. The constriction was found to consist in an opening in the internal oblique and transversalis muscles, presenting a sharp tendinous edge at its mesial border, where it was contiguous to the linea semilunaris.

The opening was dilated at its upper border, the intestine was returned into the abdomen, but the omentum, having contracted extensive adhesions, was allowed to remain in the sac.

In half an hour after the operation the patient had a copious fecal evacuation, and the abdomen became rather softer. Pulse 120, very feeble. On the following day he died.

*Sectio cadaveris.*—A small portion of the sigmoid flexure of the colon had again descended into the sac, where it had formed adhesions, these, however, were so lax as to allow of the gut being readily pushed up. The mucous membrane of the whole of the large intestine, from the cæcum to the protruded portion of the sigmoid flexure, was quite black and of soft consistency. The interior of the cæcum and colon contained black fluid similar to that which had been vomited; the portion of sigmoid flexure lying in the sac was considerably injected, but its mucous membrane did not exhibit very much discolouration; below this part the gut appeared perfectly natural. The small intestines were natural, nor was there any effusion in the peritoneal cavity, nor deposition of lymph upon the serous surface.

## NEW-YORK HOSPITAL.

## SCROFULOUS ULCER OF THE NECK, PENETRATING THE INFERIOR THYROID ARTERY—DEATH FROM HÆMORRHAGE.\*

John Redmond, æt. 28, was admitted into the New-York Hospital, April 30, 1841, with scrofulous enlargement of the glands of the neck. This disease, which was of long standing, involved the whole chain of glands on both sides, and in several places had gone on to suppuration followed by indolent ulceration. His general health was much impaired.

Under the use of iodine in various forms, the system became much improved, though the external disease was not benefitted, indeed during the summer it made considerable progress. Fresh abscesses formed in various parts, and those which had been long opened, degenerated into foul burrowing ulcers, undermining the skin, and in some places burrowing deep among the muscles. He was in this state, when suddenly a slight hæmorrhage took place from one of the largest and deepest of the sinuses, situated on the left side of the neck, over the middle portion of the sterno-cleino-mastoid muscle. The bleeding was slight and stopped spontaneously. During the next night, bleeding again took place to a much greater extent, and of a bright arterial colour. A graduated compress of lint, and moderate pressure completely checked the hæmorrhage.

On the following morning, on removing the dressings, a large stream of arterial blood spouted out, rendering it obvious that some large vessel had been opened by ulceration. The sinus was immediately stuffed full of lint, and firm pressure applied by means of the fingers. A considerable quantity of blood was lost.

A consultation of the surgeons was then called. On removing the compress in order to examine the wound, a gush of blood immediately took place, spouting out full six feet from the bed, and in a very considerable stream. The compress was instantly replaced, but not before so much blood had been lost as to reduce the pulse to a mere thread. As it was impossible, in consequence of the violence of the bleeding, to secure the vessel in the wound, and as there was too much swelling of the neck to determine accurately the exact source from which the hæmorrhage proceeded, it was determined to tie the common carotid, in the hopes that it might be either that vessel or one of its branches that was affected.

On performing the operation, in the usual situation of the sheath of the vessels, a large mass of fibrine was found, adhering to all the tissues in that region, and confounding them so as to render it extremely difficult to distinguish one from the other. After careful dissection, what appeared to be the sheath of the vessel was exposed and divided. A cylindrical body of the size and colour of the artery was then brought into view, and a ligature passed under it. Though no distinct pulsation could be felt, the operator, as well as the other surgeons, being convinced that it was the artery, the ligature was tied, without, however, arresting the flow of blood. From this it was evident, that the subclavian or one of its branches was the injured vessel, but the patient was in too low a state to admit of any further operation.

Compresses were applied so as to control the hæmorrhage, and stimulants administered. During the night, however, the compress unfortunately became displaced, and so much blood was lost that in two hours the patient expired.

A careful examination was made after death. The ligature, which was thought to have been placed round the carotid artery, was found to enclose only a band of organized lymph situated upon the sheath of the vessels which were perfectly

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\* New-York Medical Gazette, Feb. 9, 1842.

healthy. On removing the coagulum and cleansing the ulcer, it was found to have extended backwards and downwards towards the subclavian artery, the upper surface of which, just within the thyroid axis, it had reached within a quarter of an inch. At the bottom of the wound the thyroid axis lay exposed, and from it given off the inferior thyroid, running upwards and forwards, and destroyed by ulceration in one half of its circumference for the space of an inch. The ulceration had involved slightly the thyroid axis itself. The inferior thyroid, beyond the ulcerated opening, was completely obliterated, showing previous inflammation of the artery. Indeed it would appear probable that the whole of the thyroid artery had been obliterated before ulceration commenced, and would soon have been destroyed without danger, had not the ulceration reached the thyroid axis, and this, not being protected by coagula, gave rise to the fatal hæmorrhage. The other arteries of the body were healthy.

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### HOTEL-DIEU.

#### CLINICAL PRACTICE OF M. ROUX.\*

We shall select from this report some remarks with regard to amputations and the excision of joints.

#### I. AMPUTATIONS.

During the two years 1840, 1841, M. Roux performed 35 capital amputations, as follows :

<i>Amputations of the Thigh.</i>					
In 1840	..	8	..	Cured 4	.. Died 4
In 1841	..	8	..	Cured 2	.. Died 6
Total	..	16		6	10

In one of these, amputations of both thighs was performed, at an interval of a month.

<i>Amputations of the Leg.</i>					
In 1840	..	6	..	Cured 4	.. Died 2
In 1841	..	6	..	Cured 3	.. Died 3
Total	..	12		7	5

<i>Amputations of the Arm.</i>					
In 1840	..	..	..	Cured 1	.. Died 2
In 1841	..	..	..	Cured 0	.. Died 0

<i>Amputation of the Fore-Arm.</i>					
In 1840	..	..	..	Cured 1	.. Died 0
In 1841	..	..	..	Cured 3	.. Died 0

These two years afford therefore 35 capital operations ; the result, 16 deaths ; 18 cures.

This result is stated to be favourable in comparison with previous years. Since 1833, 178 amputations had been performed at the Hôtel-Dieu ; of these 104 died and 74 were cured.

Out of these 178 amputations, 63 were of the thigh, of which 43 proved fatal, and 20 were cured.

With regard to the nature of the cause rendering the removal of the limb necessary, it appears that in 11, the lesions were acute, as gun-shot wounds, gangrene, &c.

Of the Thigh	- - - 4	- - - Died	4	- - - Cured	0
„ Leg	- - - 3	- - - „	3	- - - „	0
„ Arm	- - - 2	- - - „	2	- - - „	0
„ Fore-arm	- 2	- - - „	0	- - - „	2
	<u>11</u>		<u>9</u>		<u>2</u>

In 24, the lesion was chronic, as white swelling, organic affection of the bones, &c.

Of the Thigh	- - 12	- - - Died	5	- - - Cured	6
„ Leg	- - - 9	- - - „	2	- - - „	7
„ Arm	- - - 1	- - - „	0	- - - „	1
„ Fore-arm	- 2	- - - „	0	- - - „	2
	<u>24</u>		<u>7</u>		<u>16</u>

*Remarks.*—The ratio of mortality, as exhibited by these tables, does certainly appear to us to be extraordinarily high, much higher than it is in England. In a report of the results of amputations, at University College Hospital, published a short time ago in the Medico-Chirurgical Transactions, it appeared that, during a period of about six years and a half, 66 amputations had been performed there, of these 56 were cured and only 10 died; and out of 364 amputations, collected by Dr. Machardy,\* only 83 deaths took place.

## II. EXCISION OF JOINTS.

No surgeon in France appears to have so exerted himself to bring this operation into favour, as M. Roux. The difficulties and length of the operation itself, however, and the time during which it is necessary to wait for a definite result, for a complete cure, have proved serious obstacles to its being much employed. M. Roux thinks that he owes a considerable portion of the success which he has met with in performing this operation, to an important modification adopted by him, since August, 1840, namely in making a T incision by the side of the limb, instead of the H incision usually employed by other surgeons. This modification renders it more easy to dress the wound without disturbing the limb, or causing it the slightest motion. The elbow is the joint to which this operation is most applicable. The following is the report of 6 cases of excision of this joint, performed by M. Roux.

No. 1.—Caries of all the bones of the left elbow, in a woman aged 41. Complete success. Re-establishment of all the motions.

No. 2.—White-swelling of the right wrist, with abscess, numerous fistulous sinuses. Young man, aged 22. Excision of all the bones entering into the composition of the joint. Very remarkable success.

No. 3.—Excision of left elbow, in a man aged 59, for white swelling, accompanied by abscess, sinuses, enormous fungous growths; success.

No. 4.—Excision of the right humero-cubital articulation, for caries of the three bones. Death 16 days after the operation, from extensive erysipelas.

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\* Vide Med. Chirurg. Review, No. 71, Page 172.

No. 5.—White swelling of the left elbow; excision; complete success in a man aged 26.

No. 6.—Excision of the right elbow in a man, æt. 40, for white swelling. The patient is still in the Hôtel Dieu, the wound being not yet quite healed.

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CASE OF LESION OF SENSIBILITY AND MOTION IN A PERSON LABOURING UNDER SYPHILIS. By PAUL WILLIAM SWAIN, Esq.\*

Robert Roseovar, aged twenty-eight, contracted a venereal disease when at the age of 20, for which he was treated by an empiric. He soon after had an attack of the rheumatism, which lasted, with varying intensity, for some months.

Three years ago a severe pain fixed itself in the region of the occiput and upper cervical vertebræ, and soon afterwards these parts began to enlarge. It appears that he took very little notice of these symptoms for some time, until their increasing intensity compelled him to seek medical assistance.

Accordingly he was directed to take iodine, and was treated for venereal perioritis; this had the effect of diminishing the enlargement in the occipital region, but considerable tumefaction remained, and this still continues.

Eighteen months ago, the pain in this tumefaction became much aggravated and extended down the back. The patient now, for the first time, began to suffer from slight twitchings, principally in the lower extremities, but occasionally in other parts of the muscular system. These gradually increased until they became violent spasmodic actions of extension and flexion. The lower extremities seemed to elongate, and were then suddenly flexed upon the abdomen. Occasionally the arms were forcibly thrown above the head, though the upper extremities have always been more under the control of volition than the lower. The limbs were slightly benumbed, especially the right leg, but the sense of touch on the surface seems to have been throughout unimpaired; he experienced a sense of impending suffocation; the breathing was often hurried: the least emotion increased his spasms; he had frequent priapism and spontaneous emission.

Nothing seems to have been done for the poor fellow at this stage of his suffering. His friends, thinking that he was bewitched, consulted a professor of the black art.

The lower extremities lost the intensity of their spasmodic action, but by degrees were drawn up in a state of tonic spasm, so as to be firmly flexed upon the body. About this time he was recommended to employ daily considerable extension of the contracted extremities, and on one occasion of the performance of this operation, early in June last, the thigh-bone, probably affected by venereal taint, gave way at its middle third, in which part the patient had for some time felt considerable pain.

It was at this period that Mr. Swain first saw the case, and, being struck with its peculiarities, determined to examine it with attention.

Every means have been devised to keep the fractured thigh in a state of extension, but as the patient could only lie on his back, or partially on one side, and excoriations took place at the points where the extending forces had their bearing, nothing like a slightly cure of the broken bone could be effected. The large adductor muscles have drawn the lower end of the fractured bone almost to a right angle with the upper portion, whose point very nearly penetrates the integuments and skin of the thigh, which is nearly five inches shorter than its fellow, nor is there at the present moment any union between the broken portions of bone.

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\* Prov. Med. Journ. August 27.

The patient experiences no pain of any consequence, nor has there been any severe suffering from the first moment of the fracture. The following is a short summary of his condition :—

Slight emaciation about the legs : appetite good : bowels open daily : pulse natural : mind unaffected and in full power : the head is slightly thrown back, but he can move it laterally to a considerable extent.

When the bed-clothes are removed so that the cold air comes in contact with the body, the lower extremities are still further drawn up, until the heels rest upon the nates ; after a short time they gradually relax, and assume their usual state, but tickling the soles of the feet reproduces the spasmodic contraction. On the occurrence of any intense or sudden emotion, the arms partake of the same kind of flexion, although in general he can help himself to all he requires with his hands.

He is unable to retain his urine any time, but he never wets his bed during sleep, nor has he at present any priapism.

The patient being still alive, we can only speculate on the exact pathology of this interesting case, but we are considerably assisted by the details of a very similar one mentioned by Dr. Marshall Hall, in his late volume on "Diseases and Derangements of the Nervous System," when a post mortem examination discovered a nodule of bone in the dorsal region of the spinal canal. In this case we may fairly infer, in like manner, that a venereal exostosis is attached to the inner surface of one of the upper cervical vertebrae, pressing upon the spinal marrow, and giving rise to the above-mentioned symptoms.

#### SURGICAL CASES AND OBSERVATIONS. By JAMES SYME, Esq.\*

*Nasal Polypus.*—Andrew Lawson, æt. 47, was admitted into the Hospital on the 23rd of April. In the early part of the present year, he observed a growth in the left nostril, which gradually increased, obstructing the passage and bleeding from time to time. It at length protruded externally, bleeding profusely on several occasions. The tumour distended the nostril, had a brownish red colour, with soft friable consistence, and bled under the slightest touch.

No doubt existed as to the nature of the disease, which was obviously malignant, and negated any attempt at removal by evulsion. The simple mucous polypus may easily be removed by the forceps, but the vascular pulpy growths which originate from the osseous texture do not admit of complete eradication, except by taking away the bone from which they spring ; and as the part affected is usually inaccessible, from involving the sphenoidal or ethmoidal cells, it is hardly ever possible to effect this. The only prudent course, therefore, in such cases is, to abstain from interference, as even clearing the nostrils has, in some instances, proved fatal, by exciting inflammation of the parts within the cranium.

The patient accordingly, after having had the projecting portion of the tumour cut off, was informed that nothing more could be done for him, and left the hospital as incurable. He soon afterwards returned to say that the bleeding had increased, and became very desirous of having an operation performed. On re-examination the previous opinion as to the nature of the disease, was confirmed, but some favourable circumstances were detected. Though the nostril was dilated, the root of the nose and nasal bones did not show the slightest appearance of enlargement ; there was no pain or uneasy feeling in the region of the frontal sinuses ; the eyes were natural as to position and vision ; the morbid growth was confined to one nostril ; and it seemed to be connected with the walls of the

\* London and Edin. Monthly Journal, September.

cavity near the external orifice. As there thus appeared reason to conclude that the disease originated either from the inferior spongy bone, or some other accessible part, Mr. Syme determined to try what could be done for the poor man's relief.

An incision was made through the upper lip, from the nostril downwards to the mouth, and the flaps separated so as to examine the attachment of the tumour. It then appeared that the growth proceeded from the septum, by a narrow neck not larger than a four-penny piece, immediately above the connection of the cartilage to the bone, and that there was consequently no difficulty in rooting out the disease. The septum was then cut through a little way above the lower margin, so as not to interfere with the columna, the bone divided, and the remaining cartilaginous attachments separated. The surfaces of the wound were then brought together, and retained by sutures. In the course of a few days there was hardly any perceptible trace of the operation, and the patient has since continued perfectly well.

*Remarks.*—This case shows how careful we should be before condemning a patient as incurable; it also affords an example of malignant disease in the nasal cavity, originating from a very unusual source; and it proves the advantage of gaining additional freedom of access to the nostril, by dividing the lip, instead of cutting through the *columna*, or slitting open the *ala*, neither of which modes would have afforded so much space, or probably have left so little deformity. Some years ago Mr. Syme laid open the nostril in the last-mentioned way in order to extract a large fibrous polypus, but did not succeed; afterwards he removed the superior maxillary bone, as the only means of relieving the patient from the disease. The morbid growth for which this severe operation was undertaken, is fortunately of very rare occurrence. It is distinguished by firmness or tenacity of texture, resembling that of the ligamentous structures, strong and extensive adhesions to the surface of the bones composing the nasal cavity, and tendency to bleed, causing frequent and profuse epistaxis. In 1840, M. Flaubert of Rouen, removed the superior maxilla, for the detachment of a fibrous polypus, and the same operation has recently been performed by Professor Mott, of New-York, with success.

In all these cases the bone was perfectly sound, and was removed merely to afford room for separating the tumours: these, therefore, are very different from the ordinary affection of a malignant nature, in which the growth springs from the interstices of the bones, and, except in such very peculiar circumstances as occurred in this case, does not admit of any beneficial operation.

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### STATISTICS OF OPERATIONS.

REMARKS ON AMPUTATION. By ALEXANDER KING, Licentiate of the Royal College of Surgeons in Edinburgh.

Mr. King, the author of the Remarks upon Amputation, was induced to direct his attention to the subject from observing the difference of results between the operations in Glasgow and the Country, and particularly from witnessing the mortality in the Glasgow Infirmary.

Mr. King first touches on the subject of immediate and secondary amputations after injuries, and agrees with those (the majority) who advocate the former. Yet statements are as contradictory as can well be imagined. The following Tables bear upon the subject.

1. Mr. King introduces a table of Mr. Alcock's, it is as follows:—

	PRIMARY.			SECONDARY.		
	No.	Died.	Mortality.	No.	Died.	Mortality.
Mr. Guthrie's Series at Thoulouse :—						
Upper Extremity . . . . .	7	1	7.	16	4	1 in 4
Lower Ditto . . . . .	41	9	4.5	37	18	2.
Mr. Alcock's Series in Spain and Portugal :—						
Upper Extremity . . . . .	12	1	12.	12	2	6.
Lower Ditto . . . . .	21	4	5.2	21	10	2.1
Messrs. Hayward and Norris's Amputation for Injuries received into Civil Hospitals :—						
Upper Extremity . . . . .	17	3	5.6	11	1	11.
Lower Ditto . . . . .	26	8	3.2	25	11	2.2
Messrs. Hayward and Norris's Amputations for Chronic Diseases :—						
Upper Extremity . . . . .	10					
Lower Ditto . . . . .	48	8	6.			
	58	8	7.2			

Now, from a Table of amputations performed in the Edinburgh Royal Infirmary from 1st July, 1839, to 1st July, 1841, it appears that there were 69 amputations, with 50 recoveries and 19 deaths. Of 50 male patients 15 died—of 19 female patients 4 died, leaving the balance of recoveries in favour of the females. The primary amputations were 10 with 9 deaths! The secondary were 33 with 9 deaths. This is in favour of secondary amputations.

The following Table from the Massachusetts Hospital leans to the same side.

*Amputations performed at the Massachusetts General Hospital,—reported by Dr. Hayward, (since opening of Institution.)*

	PRIMARY.			SECONDARY OR OTHERWISE		
	No. of Cases.	Cured.	Died.	No. of Cases.	Cured.	Died.
Thigh . . . . .	6	3	3	28	23	5
Leg . . . . .	5	3	2	19	15	4
Shoulder . . . . .	—	—	—	4	4	—
Arm . . . . .	—	—	—	4	3	1
Fore-arm . . . . .	2	2	—	4	3	1
	13	8	5	55	45	10

Grand Total, 68 Cases, 53 recoveries, 15 deaths.

It seems hard to decide the matter from Tables.

To proceed with Mr. King's "Remarks." He reprobates a very long knife  
No. 90.



for the first incisions—an ordinary-sized Lisfranc's knife is best, as there is no necessity for changing it in order to cut upon the bone.

Mr. King, we are glad to see, is no party to the *humbug* of affecting to despise the tourniquet upon every occasion. No doubt it can be dispensed with when there is good assistance, but, if properly managed, it is itself a very excellent assistant. Mr. King observes:—

“When enlarged lymphatic glands lie over the course of the blood-vessels, the Tourniquet is decidedly preferable to compression with the hand. I have seen an injurious loss of blood occasioned by trusting to compression when this state of parts existed.”

Mr. King makes some sensible observations on the *Circular and Flap Operations*:—

“The method of operating by flap, which appears to have originated with Mr. Lowdham of Oxford, and is now generally adopted in this part of Scotland, is, after time has been afforded for a fair trial of its merits, very generally admitted to be more easily and rapidly executed than the circular, and consequently less painful to the patient; and usually the reunion is more speedy and certain, the stump is better covered, less conical, and in every respect better suited for all after purposes. It is alleged that the blood-vessels are secured with great difficulty after the flap operation, in consequence of being cut obliquely; but this appears to be a theoretical objection. Until Mr. Liston's removal to London, the flap operation was almost exclusively confined to Scotland, and the circular is still generally preferred in England, on the Continent, and the United States of America. I have always adopted the flap operation, because I think the ease and rapidity with which it can be performed, recommend it strongly to young Surgeons; but from what I have seen in the practice of friends, and in hospitals, I do not think that the double flap, the oval, or any of their combinations, deserve the exclusive preference which Mr. Liston appears to give them. Malgaigne, a very excellent authority, in his *Operative Surgery*, prefers on the whole the circular method; and Dr. Lawrie, to whose practical lectures on Surgery I owe much, is also favourable to the circular. Dr. Ballingall, in his *Military Surgery*, says:—

‘I know of no comparative estimate of the results of amputation performed by the circular incision, and by the double flap, which will enable to decide their respective merits by the test of experience.’—*Page 368.*

In the truth of this observation I fully concur. The tables given by Mr. Alcock, in his lectures in the *Lancet*, (1840–41,) page 647, are very unsatisfactory, and the numbers are too small to settle the various questions involved.”

No candid person of good sense and experience can join, we think, the exclusive partisans of either method. The circular operation, if well performed, is undoubtedly a successful one, and, no doubt, the flap operation is successful too. One man will prefer one and excel in it—another man will choose the other. Mr. King thinks the circular operation the best calculated for the middle of the arm and upper part of the leg.

Mr. King touches on the question of amputating the leg just below the tuberosity of the tibia or lower. He observes that the lower the amputation, the less the risk. The chief reason for preferring the high amputation, is the interference of a long stump with the operations of the common wooden leg. But in Glasgow that is not employed, another sort of apparatus being had recourse to. It consists of a hollow wooden box, to which a short wooden pin is attached, and is made to press on a pad fixed round the leg below the knee. When such an apparatus is used, the patient has the free and unrestrained use of the knee-joint, and walks with as great freedom and ease as if he had only an enchylosed ankle joint; whereas with the pin, he requires to drag the leg behind him, on account of the action of the muscles being interfered with, by the bent state of the joint. This apparatus is equally well calculated for all other purposes as well as walking. It is worth while trying this in our London hospitals.

In amputation of the thigh, Mr. King prefers anterior and posterior to lateral flaps. For he says:—

“When the flaps are laterally formed the bone is apt to be raised by the action of the muscles, or in the act of dressing the stump, and left uncovered at the upper angle of the wound; and the pressure of the lower edge upon the pillow, separates the incised surfaces, prevents adhesion by first intention, and leaves a large suppurating cavity. When the line of incision is transverse, the surfaces are pressed together, and maintained in apposition around the bones by the weight of the parts themselves, and a most favourable opportunity is thus afforded for immediate union. By keeping one angle somewhat lower than the other, the pus is allowed as free an exit as when the flaps are formed laterally.”

Mr. King reprobates, in just terms, the absurd way of dressing a stump, yet, perhaps, too prevalent. Straps, plaisters, compresses, bandages, are piled one upon the other, with the effect of heating, inflaming, promoting the formation of matter, and locking it up when formed. All this is barbarous surgery. Mr. King's method is the following:—

“I have been in the habit of bringing the incised surfaces together, and keeping them in that state by two or three stitches, assisted by a narrow strap of plaster between each. Care is taken that sufficient openings are left for the escape of pus, &c., between each stitch and plaster. Over the line of incision is applied a piece of lint spread with soft ointment. An equable pressure is kept up over the whole limb by the application of a bandage, commencing from above, and carried downwards by circular folds to nearly the edges of the incision, but avoiding the front of the stump, in case of retarding the escape of matter. The limb is then placed on a pillow, on a level with the body, with one edge of the wound slightly depressed, and covered in such a manner as may best suit the season of the year.”

We are not convinced of the propriety of any circular bandage at all. If it makes any compression it must interfere, pro tanto, with the return of the venous blood. If it makes no compression, we do not see what object it can serve.

Mr. King alludes with dissatisfaction to the plan of allowing the surface of the stump to glaze, as it is called, before bringing the edges together. This was originally introduced by Dupuytren. Mr. King observes:—

“It is alleged that this method diminishes the risk of secondary hæmorrhage, and is consequently safer for the patient than that usually followed. That hæmorrhage does occasionally occur, when the patient, from being in a state of collapse on the table, has become heated in bed, is unquestionably true; but if the most important blood-vessels have been carefully secured, its occurrence is too unfrequent to justify a surgeon in resorting to such a harsh expedient, as I consider dressing a *deux temps* to be. Notwithstanding what has been said to the contrary, I am satisfied from the few cases in which I have seen it tried, that the patient suffers nearly as much from the continued anxiety and alarm, joined with the pain of the dressing at the late period, when the parts have become swelled,—more or less inflamed, and acutely sensitive, as from the operation itself. When secondary hæmorrhage does unfortunately occur, the patient will suffer less from the separation of the edges, and the application of a ligature to the bleeding vessel, than from the alternative which Mr. Liston has suggested. Every body knows that very slight pressure is often sufficient to arrest hæmorrhage from arteries of the third and fourth importance, and the mere pressure of the flaps will close up many vessels from which more or less blood will issue if left covered with wet cloths. Weak, debilitated patients frequently fall into a tranquil and refreshing sleep, after the fatigues of an operation; an event so highly desirable cannot happen when the dressing is delayed, as the patient's mind is in a state of perpetual excitement till he is satisfied all is over; he cannot be expected to know all the steps of the operation, and after having borne the pain of an amputation, he must be excused for exhibiting more or less incredulity,

when told that the subsequent dressing is attended with no pain. The plan has been fairly tried by many practical men, and has been very generally condemned."

We confess that we are of Mr. King's way of thinking. If the vessels are properly secured at first, there is little danger of hæmorrhage. We suspect the dressing *à deux temps* finds favour because it is rather conducive to *éclat*. The patient is got quickly off the table. But this is a pitiful motive.

Mr. King speaks with amazement, and we are not much less astonished ourselves, at the attempt lately made by Mr. Phillips and others to detract from the advantages of union by the first intention. To abandon this would indeed be to retrograde in surgery. Mr. King argues the question very ably, and, to our minds, very satisfactorily. The only shadow of a reason for preferring secondary union, is when a copious discharge has existed before the operation is performed. Mr. King's remarks on this head are very forcible and just.

"It is alleged, that the most pernicious results are likely to follow the immediate union of the stump, when extensive suppuration has existed in the limb before its removal. This doctrine appears very theoretical; its existence in practice is denied by surgeons of the highest standing, and the cases adduced in its support by Mr. Alcock are of the most unsatisfactory description. Mr. Guthrie, no doubt, gives it as the result of his experience, that fatal secondary deposits of matter in chest, liver, &c. &c., are more common after secondary amputation, and when suppuration has been profuse previous to the operation, than after primary, and appears to attribute this to the sudden arrest of the discharge; but he grants 'the continuance of the discharge would soon have destroyed the patient.' It must be borne in mind, that an operation is never performed at this late period, except the symptoms have become more aggravated, or some new cause of alarm presented itself, demanding the removal of the limb. In many of these cases the morbid action has commenced before the knife is resorted to, and would have terminated fatally, although no operation had been performed. For instance, a compound fracture is put up in the ordinary manner, and every thing goes on favourably for a time, when without any assignable cause, the patient has a rigor followed by profuse perspiration,—the appearance of the limb becomes less favourable, and the discharge more profuse,—a consultation consider amputation advisable,—the patient, a few days after the operation, dies, and dissection displays large secondary deposits; but had no operation been performed, the termination of the case and the morbid appearances would have been, in all likelihood, the same. Operations performed after well-established rigors are almost constantly fatal, secondary inflammation having previously existed. I do not recollect of having seen one case of compound fracture or amputation recover after the supervention of severe rigors. The question of immediate or secondary union cannot be settled by statistical data, except the physical and dynamic causes which were in operation be thoroughly understood. Out of the ninety-two cases, treated by Péroty by immediate union, eighty-six were cured in twenty-six days; of seventy-five treated in the same method by Lucas, five died; of six operated on by Pelletan, and treated by union by granulation, one recovered."

The remainder of the Pamphlet is chiefly occupied with the remedies for due ventilation in the wards of a hospital, and an exposé of the bad state of the Glasgow Infirmary. But these subjects require no further notice.

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## Spirit of the British and American Periodicals.

### MESMERO-PHRENOLOGY.

A MARRIAGE extraordinary has lately taken place between phrenology and mesmerism, to the great scandal and indignation of the rational and sober advocates of the former science. If Mother Mesmer prove as prolific of her afterbirths as she has been in this her first litter, we shall soon have such a swarm of hybrid monsters as would have frightened Deucalion and Pyrrha out of their seven senses.

Terruit Gentes *grave* ne rediret  
Sæculum Pyrrhæ, NOVA MONSTRA.—

We shall exhibit one or two specimens of the unhallowed brood which this unnatural alliance has already given birth to. The profession may well be characterised as in a state of anarchy—or rather insanity, when such examples of mental obliquity, infantile credulity, and astounding self-delusion are exhibited to the world!

Mr. Brookes, of Liverpool, was the accoucheur who brought into this world the following sample of the first-born of the matrimonial alliance under consideration.

Sarah Badger, from her 14th year, was subject to epileptic fits—and from 14 to 17, was seldom many days without them. She ultimately became insane, and was confined in more than one work-house or asylum. She was therefore an excellent subject for giving birth to mesmero-phrenological bantlings—at least according to Mahomedan belief.

After one of her releases from lunatic restraint, Mr. Brookes took her into his service, but the fits became more decided, and the insanity returned. Before she could be got into another asylum various mesmero-phrenological experiments were made on certain of her organs—especially *TIME* and *TUNE*, which we must pass over. After another year's incarceration, she again came into the service of Mr. Brookes, and it is at this juncture that we shall quote the words of the narrator.

"In November last I began to mesmerise her, and she soon became lucid. On the 16th of December, *she directed me* to mesmerise her on the 20th, and permit her to sleep for 24 hours, during the last of which she said she should be able to tell us the cause of her fits, if they were curable, and what remedies should be applied. She was laid to sleep accordingly, and about the tenth hour there appeared symptoms of considerable determination of blood to the head, and she began to hear and speak of the most exquisite music, and asked who was playing, and where, &c. ? By and by she began to sing to it, at first feebly, but after the first minute or two with her usual power.

"The physical exertion, I had no doubt, would be injurious, as she was in a very exhausted state; and I therefore endeavoured to restrain it. With this view, I breathed strongly on the organs of *Time* and *Tune*, and she gradually ceased singing, saying, 'They play it very badly—I can hardly hear them now—humph, they've stopped now.' In a minute or two after I had ceased breathing upon her, she said, 'Hush! now they're playing—

'Gaily the Troubadour,'

and immediately began to sing it—starting about the middle of the tune—not at the commencement. *I then pointed my fingers to her mouth, rendered her tongue*

*cataleptic, and sealed her lips up*; but she still continued the efforts to sing, producing the usual humming sounds through the nostrils for a short time, and then ceased. On releasing her mouth, I inquired, 'Is the music playing now?' 'Yes,' she replied, 'very prettily.' 'Then, why did you stop singing?' 'I could not help it—I could not sing.' 'Why?' 'Because you forbid it.'

'She still heard the music several times after this, and joined it with her voice; but as often as she did so I renewed my operations on *Time* and *Tune*, and stopped it. At length the frequent stoppings annoyed her, and she said, 'They played so very badly, and stopped so often, she would listen to them no longer.'

"On the 28th of December, after considerable exertion in the somnambulist state, she appeared much fatigued, then became very happy, and heard sweet music—a violin. A large musical box was placed close to her ear whilst playing a lively waltz. 'Do you hear the music now?' 'Yes.' 'What is it?' 'A violin.' 'What is it playing?' 'Home, sweet home.' I breathed upon *Time* and *Tune*, and she said, 'the music had stopped.' The musical box was still playing.

"Several ladies were present, who wished to hear her sing, and she was permitted to sing several songs. Whilst she was singing I again cataleptised the *tongue and jaws*, and sealed the *lips up and she continued*. I again breathed on the organs, and stopped her in the middle of the tune, and she said, she stopped 'because the music stopped—she did not know why.'

"On being awoke soon after, she complained of pain in the forehead. 'Where is it—here?' said Mr. D. placing his finger on the middle of her brow. 'No, not there—on the side.' She was directed to place her finger on the spot, and she raised her hand, and placed her finger precisely on the organ of *Tune*. A short time after Mr. D. said, 'Did you say this was the spot where you felt the pain?'—putting his finger on the organ, when she instantly shrunk from it as if it gave her great pain, saying 'It was so very sore just there. she could not bear it touched.'

"Other parts of the forehead were touched, and it did not give her pain, only at the seats of *Time* and *Tune*; and she said she had not felt the soreness before, and did not know the cause, 'unless we had been doing something to her during her sleep that had caused it.'

"On a previous occasion, whilst walking about in the somnambulist state, she was much distressed, and complained that I was leading her down a fearful 'steep hill,' and was immediately relieved of her apprehensions by my breathing on the organ of *Weight*.

"Though I had carefully noted the foregoing acts, as confirmatory of the organs in which they spontaneously exhibited themselves, yet it never occurred to me to attempt exciting any of the other organs until Saturday the 15th ult. when I received an old 'Liverpool Albion,' containing a report of the experiments of Drs. Buchanan and Collyer, and then of course felt surprised the experiments had not occurred to me before.

"I proceeded forthwith to test them—my first operation was on *Benevolence*, and was much surprised to find it produced effects directly contrary to those I expected: in fact, decided manifestations of *Combateness* and *Destructiveness*, which for a time rather perplexed me, so I next tried the two latter organs, and found the manifestations totally changed. I next tried *Cautiousness*, and produced *Fear* and *Despondency*, and my operations on *Hope* and *Ideality* seemed only to increase her misery; but on my again operating on *Cautiousness*, she became better, and a further operation on *Hope* and *Ideality* made her perfectly happy and cheerful. From these results I of course inferred that by one mode of operating, the organ might be stimulated to greater activity, and by another mode might be rendered incapable of its ordinary activity.

"On a subsequent occasion, I had had my hand on her forehead, for the purpose of assisting her in examining the brain, and then endeavoured to stimulate the whole of the intellectual organs, and the following were the manifestations—

'O, dear, I feel so well and so different; I feel as if I should like to sit and talk for hours—O, I wish I could find words to express myself—I don't know how I feel ~~happy~~, but so happy, and clear, and light-hearted—and—and affectionate like, (*Benevolence*.) And what's the cause of all this?'

"I really don't know—I feel quite a different thing—I could *discuss* with anybody now—on any subject—I feel capable of anything—and of talking to anybody—O, if I could but find words to express myself—I think my head must have some of yours about it, somehow, for it has more in it than ever I knew before—I'm sure I'm *cleverer* now than I used to be—do converse with me about something—any subject—what *shall* we talk about,' &c.

"I have since on several occasions, tried other organs singly and with similar success—generally producing increased activity, but sometimes rendering them somnolent, and leaving their antagonist's faculties in unrestrained activity."

If the worthy Lord Mayor of Dublin should peruse the above narrative, he would be apt to exclaim—"this bangs Bannagher." Observe the beautiful simplicity and truth with which the Prophetess delivers her oracular responses. She desired Mr. Brookes to lay her asleep for 24 hours, in order that she might tell the nature of her fits, and the proper remedies. In due time she developed these important matters by "hearing and speaking of most exquisite music!" There's a lecture of etiology and therapeutics for you!! Then a musical snuff-box was applied to her ear. She declared it was a *violin*! The tune it played was a "*lively waltz*," (in Mr. Brooke's apprehension at least) but the Prophetess asserted that it was "*Home, sweet home*"!!

Then again, the operator rendered the tongue of the Prophetess cataleptic, and sealed her lips up. Yet she *continued to sing* for the amusement of some ladies that were present! This shows how difficult it is to stop a lady's tongue, whether Mesmerized or not. The consistency and truth of Mesmero-phrenology are beautifully illustrated by certain experiments which Mr. Brookes made "on Saturday the 15th ult." of some month unnamed. His first operation was on the organ of *Benevolence*, when decided manifestations of *Combativeness* took place!!!

Let the rational phrenologists look to this in time. When we see the public marriage between Mesmerism and Phrenology, and the meretricious Harridan introduced into a phrenological institution as a modest woman, we apprehend that phrenology is in danger, and that there are "snakes in the grass." We have strong suspicions, indeed, that Mr. Brookes himself is a sly anti-phrenologist, as well as a secret enemy of Mesmerism, who, under the mask of disciple and true believer, has taken a most ingenious way of damning both the one and the other science.

Be this as it may, we shall now advert to a narrative, the author of which cannot be suspected of insincerity, however much we may consider him the victim of credulity and deception. It appears that a Capt. Valiant, of the 40th Regiment has a worthy and attached nurse, who, under the influence of magnetic Mesmerism, [communicated from Sir Thos. Wilsher and *Sir Thomas alone*,] underwent a surgical operation while entranced by that gentleman, without knowing or at least acknowledging, that the said operation was being performed! Crædat Judæus. This faithful nurse appears to have learnt her part to admiration. She has beaten Miss Okey out of the field. By the way, where is Miss Okey? Are her exhibitions *confined* to private rehearsals now? This nurse, then, came to Dr. Elliotson, at a time when Mr. Brookes was in the Doctor's library, with his patient Miss Badger, the heroine already noticed. The "short, delicate, artless woman, 30 years of age," (the nurse) offered to submit to the Doctor's manipulation, provided her mistress, who is, no doubt a true believer, were present.

After the Doctor had thrown the "artless woman," into profound mesmeric sleep, the following phenomena were elicited.

"On touching the organ of Self-esteem, she rose instantly from her seat, elevating her hand as high as possible, speaking with the utmost pride and disdain, displaying the natural language of these emotions in the most exquisite manner. On withdrawing my finger and placing it upon the organ of Benevolence, the change was instantaneous to a humble and kind expression of countenance and voice, and she was all gentleness and goodness. On placing my finger on the organ of Wit, she became at once most merry and facetious. On pointing over the organ of Parental Love and Attachment, she became serious and gentle, and the tears streamed down both cheeks; indeed, her distress was such that I was obliged to touch over some other organ. She talked of her husband, whom she had not long seen, and of Mrs. Valiant's baby. On touching over Destructiveness, her violence was outrageous; but instantly changed to pride, gentleness, melancholy attachment, or wit, when my finger left it for the respective organs of those faculties. *I played upon her brain, by my fingers, as readily as upon a piano forte.*\* Great as are the miracles of Mesmerism, witnessed by me now for above five years, these phenomena surpassed all." †

*Eheu jam satis.* Dr. Elliotson feelingly and somewhat indignantly deplores the indifference with the profession has shown to the miracles of Mesmerism. He says they are as indifferent to Mesmeric facts, "as the cattle grazing in the meadows are to the wonders of the steam-carriages passing by them on the railroads." The simile is more applicable than Dr. Elliotson supposes. When the trains first began to run, the cattle scoured away in all directions, as if some DEMONS or SUPERNATURAL BEINGS were thundering along the road. But TIME generally removes the film from our mental as well as our material optics—and this seems to have been the case with the cattle, who soon found out that there were no GIANTS or HOBGOBLINS in the trains—and probably the bipeds will ultimately discover that there is neither magic nor magnetism in the Mesmeric passes, but a precious lot of humbug, credulity, and delusion.

#### CARTILAGINOUS DISEASE WITH PERFORATION OF THE STOMACH.

By Dr. KENNION.†

On Friday, June 10th, Dr. Kennion was requested to see Mr. T. æt. 49, in consultation with Mr. Parry. He was somewhat emaciated, his countenance anxious; pulse 76, languid; tongue white and swollen. His principal complaint was of extreme distention of the bowels, "as if he would burst;" there was no tenderness on pressure; the motions were said to be black and offensive. His appetite was tolerably good, and he never suffered any inconvenience after eating beyond that arising from the flatulence.

It appeared that the patient had been out of health for several years, but had become much worse within the previous six months; the principal symptom has been the frequent recurrence of paroxysms of intense pain, generally coming on at night, and referred almost entirely to the umbilical and hypogastric regions; these paroxysms were always connected with a great degree of flatulent distention, and generally passed off with the discharge of flatus.

Under these circumstances he came to Harrowgate, but without at first deriving much benefit. The treatment adopted, consisted of small doses of blue-pill,

\* We should like to know which of the two predominates in the Mesmerophrenological head—*Piano* of the brain, or *Forte* of the skull?

† Medical Times, 25th June, 1842.

‡ Prov. Med. Journ. July 2.

extr. of colocynth and hyocyamus to regulate the bowels; the nitro-muriatic acid, with decoction of taraxacum as a general tonic and with the view of acting upon the liver, which was evidently in fault; and the use of the assafœtida lavement, for the purpose of relieving the tympanitic state of the bowels; at the same time his diet was carefully regulated.

He appeared to improve under this line of treatment, when suddenly he was seized with the most agonizing pain over the whole abdomen, which was so tender that he could not bear the slightest touch; the pulse was extremely rapid, the countenance anxious. In a few hours he expired.

On opening the abdomen, there were found more than three quarts of turbid serum, with some flakes of lymph. The bowels were enormously distended. On the anterior border of the lesser curvature of the stomach, were found two irregular openings, of about three quarters of an inch in diameter, the margins of which were as thin as a piece of paper. These perforations were about an inch and a half from the pylorus, and were situated in the centre of a mass of cartilaginous substance, which involved the whole circumference of the stomach, for a distance of from three to four inches from the pylorus. The mucous membrane lining this diseased portion did not present any unhealthy appearance, excepting that in one or two small patches it was slightly turgid and of an ashy hue. But the muscular coat seemed to have disappeared entirely, and to have been replaced by cartilage. The thickness of this substance varied from a quarter of an inch to an inch; it had a nodulated appearance, and when cut into was perfectly white, homogeneous in structure, and without any bands or striated appearance whatever. The pylorus itself was only slightly thickened from an hypertrophied state of the mucous membrane.

In some parts the serous coats of the stomach was involved in the cartilaginous degeneration, while in others it was quite healthy.

Attached to it in different places, by short pedicles, were a large number of small fatty tumours, each contained in a fibro-serous capsule.

The liver was congested; the gall-bladder filled by an enormous gall-stone. The rest of the abdominal viscera were perfectly healthy.

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CASE OF VENOUS HÆMORRHAGE FROM AN ABSCESS. By ROBERT STORES, Esq., Doncaster.\*

The following case bears some analogy to that one of Mr. Liston's lately discussed at the Medico-Chirurgical Society.

William Heaton, a shoemaker, aged 36, was seized, Dec. 14, 1839, with severe febrile symptoms, accompanied by an extensively diffused swelling over the front of the throat, of a phlegmonous, erysipelatous character. In spite of leeches, fomentations, poultices, &c. suppuration commenced, and on the 21st evident fluctuation could be felt on the left side of the larynx. As the constitutional symptoms were very severe, the abscess was opened immediately, and above a pint of very offensive sanious pus was discharged, accompanied with some large shreds of what appeared to be then dead cellular structure. About a pint or more continued to be discharged daily, and the sac of the abscess was found to extend itself from the left of the larynx and trachea, to the nape of the neck on that side, and from the angle of the jaw to the clavicle.

On the 30th some hæmorrhage occurred from the opening, evidently of venous blood, which was controlled by pressure over the internal jugular; this pressure was kept up, and though the discharge of pus continued, no blood es-

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\* Provincial Medical and Surgical Journal, April 2, 1842.



caped until the night of the 1st of January, when it recurred and was again stopped. During the following night, however, it again burst forth, and on the following morning he died.

No examination of the body was permitted, but there could be no doubt that the abscess had implicated the internal jugular vein, the coats of which had been destroyed, and had probably been partly cast off at the time the abscess was opened, and that a large discharge of blood had been then prevented by the deposition of coagulable lymph at the venous orifice.

CASE OF LARDACEOUS CANCER OF THE CRANIUM. BY ALFRED BAKER, Esq.\*

Joseph Rollason, æt. 31, a glass-cutter, of intemperate habits, states that about three years ago, being intoxicated, he fell and cut the forehead on the left side. This wound soon healed, and he never experienced any ill effects from it. About seven months ago, after residing in a damp situation, he was attacked with a violent pain in the head, occasional giddiness and dimness of sight. He also felt a dull and heavy pain in the left arm, with numbness and loss of power in the middle finger, and in a few days afterwards, pains in the lower extremities, especially in the joints. The pain increased, and was accompanied with a small and soft swelling over the part formerly cut. About eight weeks after the attack commenced, he complained of pain within the head, the previous pains being situated in the scalp and on the surface; he had also pain and stiffness in moving the jaw, and was only able to open his mouth to a small extent. In the course of a few days numbness and tingling down the left side of the face and left arm came on, and the sight, especially with the left eye, became affected. The swelling over the left frontal eminence, where the wound had been, began to enlarge without pain, and acquired considerable hardness.

He remained much in the same state for about four months, when suddenly the pain in the head was aggravated, and the tumour, which had been slowly enlarging, became tender to the touch. The tingling sensations were worse, and affected both sides of the face, but more especially the right. There was also puriform discharge from the nostrils, occasionally mixed with blood.

At this time, (April 10th.) there is a large ovoid tumour on the left side of the frontal bone, of about two-thirds the size of a duck's egg; it was hard, lobular, and appeared to be intimately connected with the bone; the integuments are not affected. There is also another smaller swelling, soft though still firm, on the right side of the skull near the lambdoidal suture. The two sides of the face are not quite symmetrical, the left cheek being slightly drawn. The pupils are contracted and insensible to light; he is unable to discover even a lighted candle placed before him; the left eye is more prominent than the right. Powers of smelling and tasting considerably impaired, but hearing is not much affected. Ordinary sensation not affected in any part of the body, but the motory power of the left arm is much enfeebled. Sphincters not affected; mind slightly impaired; breathing slow and easy; pulæ 112, weak and small, skin cool, bowels open. He is taking the bichloride of mercury. By the 4th of May, both eyes had become injected, and the cornea in each subsequently ulcerated.

May 19th. The patient has been progressively getting worse. He lies in a state of semi-coma, but capable of being roused when he replies to questions, articulating his words imperfectly, and talking unconnectedly. The tumours on the head have each enlarged, and becomes firmer: ptosis of upper eyelids; both

\* Provincial Medical Journal, July 16.

corneæ ulcerated; there is a hard swelling over the left malar bone, unattended with pain; his breath is extremely fetid, though he has taken no mercury for three weeks; respiration stertorous; some difficulty in deglutition; he continues to discharge a bloody matter from the nostrils; pulse 90, small and soft. Ammonia, wine and water, beef-tea.

May 27th. Has been occasionally delirious. Another tumour discovered over the right ascending ramus of the lower jaw; it is hard, ovoid, free from tenderness and connected with the bone. Has taken no food for the last two days, and the increased pressure of the brain has been marked by a proportionate coma, with stertor in breathing. He died at eleven o'clock this morning.

*Sectio Cadaveris.*—*Cranium.*—The scalp over the large tumour was very adherent; the tumour lay beneath the occipito-frontal aponeurosis and the pericranium, and was lobulated on its surface. The smaller swelling behind, was found to consist of a white medullary substance containing numerous red patches, as though from torn vessels and ecchymosis. The bone was seen at the bottom, and was eroded and cellular. When the calvarium was removed, the large anterior tumour was found to project inwards upon the brain, its inner portion not being so prominent as the external; it was enclosed in a dense whitish membrane, not adherent to the dura mater. On separating the calvarium, the tumour was seen clearly to be a growth within the proper tissues of the bone; on being divided it was found to consist of white lardaceous matter deposited within the pericranium. It was divided into two portions by the bone which traversed it nearly across the centre. The bone at this point appeared at first to be thicker than natural, but this was found to depend upon the deposition of the cancerous matter in the cells of the diploe, and upon a separation of the denser parts of the bone into laminae which were divided from each other by white lines of the same material.

The brain itself was uniformly pale and bloodless, the cineritious structure being of faint yellowish-grey colour. Upon examining the base of the cranium, the sella turcica was found to be occupied by a tumour, which projected over the smaller wings of the sphenoid and fore-part of the petrous bone, involving and compressing the contents of the cavernous sinuses and the fifth nerves with the Casserian ganglia. This growth had the same characters as those already described, and the bones beneath it were similarly diseased. On the left side the bones of the orbit seemed to be more changed than on the right, and by their tumefaction to have protruded the globe of the eye.

*Abdomen.*—The liver was large, dark in colour, and contained three or four masses of medullary or lardaceous cancer, of pulpy consistence and white colour, with spots of deep red and softer quality, as though from the process of ramollissement, and effusion of blood in consequence of ruptured vessels. One of these was as large as the palm of the hand.

*Remarks.*—The numbness and tingling in the left arm occurred before any external swelling was perceived. This would lead to the opinion that the disease first protruded in the interior of the cranium. The numbness and tingling, first in the left cheek, and subsequently in the right, show the early commencement of that medullary growth which was found in the base of the cranium, the extent and connexion of which explain satisfactorily the altered sensations in the soft parts, the amaurosis, the discharge of blood and matter from the nose, the protrusion of the left eye, and the ptosis of the left upper eye-lid, for it involved the optic nerves, the third, fourth, fifth and sixth as they pass through the cavernous sinus, the pituitary body, and the sphenoidal and ethmoidal cells, as well as the bones of the orbit. The occurrence of opacity and ulceration of the corneæ indicated destruction of the fifth nerve, and was accompanied by a pale chemosis.

The difficulty of opening the mouth depended probably not upon any nervous lesion, but on the mechanical impediment to the motions of the jaw, caused by the tumour on the ascending plate of the lower maxilla on the right side.

Lastly, with regard to the nature of the disease, Mr. Baker regards it as white medullary or lardaceous cancer of the bones of the cranium, and the characters of the tumours in the liver, in some measure strengthen this view.

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FRACTURE OF THE FORE-ARM; GANGRENE PRODUCED BY THE APPLICATION OF THE STARCHED BANDAGE.

In speaking of fractures of the middle part of the fore-arm, M. Roux recommends that the bandage should not be too tightly applied, as the principal veins of the extremity being superficial, they are easily compressed; venous circulation is impeded and gangrene may ensue. For this reason he never employs in these cases moistened bandages, or starch or gum splints. A case came into the Hôtel Dieu, in 1841, which completely realized these fears; a moistened apparatus had been employed on the fore-arm of a child; gangrene supervened, and it was necessary to have recourse to amputation.

*Case.*—A child, æt. 12, of delicate constitution, fractured both bones of the fore-arm by a fall from a carriage; the surgeon applied the ordinary apparatus, which he had previously moistened with clean water; this tightened application caused horrible sufferings during four days, when the surgeon replaced it by the starched bandage, which was less tight than the first, so that it was more easily borne; nevertheless, two days afterwards, dark vesications showed themselves at the extremities of the fingers, and on the 12th the patient was brought to the Hôtel Dieu, with well-marked gangrene of the hand and lower part of the fore arm. On the following day amputation of the fore-arm was performed. The patient ultimately recovered.—*Gazette Medicale de Paris.*

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CASE OF AMPUTATION OF THE LEG, WITH SOME OBSERVATIONS ON A NEW MODE OF AMPUTATING. By THOMAS GREEN, Esq.\*

James Allpass, æt. 34, a butcher, was admitted into St. Peter's Hospital, in 1842, under Mr. Green.

About four years ago the patient had a severe compound fracture of the right leg; the bone united, but obliquely, and there is now considerable projection of bone, with extensive ulceration of the skin around. On admission the ulcer was in a sloughing condition, with much sanious discharge, the surrounding skin was of a fiery red colour, and the whole extremely painful; the limb shortened, so that he cannot bring the heel to the ground.

It was considered necessary that the leg should be removed, which was done as soon as the patient was in a fit state. Mr. Green decided on performing the flap operation, but in a different manner from that in which it is usually done. A transverse incision having been made across the front of the leg, through the skin, another was made through the integument at the back of the limb, including a large portion of the calf, and leaving skin enough to cover the flap of muscle, which was next formed by passing the catlin through the leg a short distance behind the bones, and cutting out in the usual way; the remaining muscles were divided by a transverse incision passing between the bones, which were next sawn through and the arteries tied. Three sutures, and pieces of strapping were applied to keep the posterior flap in apposition.

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\* Provincial Medical Journal, July 2, 1842.

Three days afterwards, secondary hæmorrhage occurred, which was at last arrested with some difficulty. In six weeks the stump was healed and in good condition.

Mr. Green afterwards made some remarks upon the method of operating which he had had recourse to. In amputating below the knee, he said, he usually employed the flap operation, but several disadvantages attended this operation as usually performed, one of these was the projection of the muscle beyond the skin in muscular persons; a second was, the oblique division of the nerves: and, lastly, the oblique division of the vessels. To obviate these disadvantages many plans had been adopted. The mode which Mr. Green pursued was as follows. An incision was made anteriorly across the fore-part of the leg, in the usual situation, about two inches below the tuberosity of the tibia, extending from the inner angle of that bone to a point behind the fibula; from the determination of this incision, on the inner side of the leg, the knife was carried downwards to some extent, next across the limb posteriorly in a curved line, and brought up at the outer side, so as to unite with the front incision behind the fibula. In this manner a portion of integument was divided, which might be correctly described as representing two-thirds of an oval figure.

This incision should go through the skin and subjacent tissue, down to the fascia covering the muscles; the contraction of the integument itself, with a trifling assistance by drawing the skin upwards, leaving a separation of about half an inch between the edges of the incision. A long catlin was now pushed through the leg, about one-third of an inch behind the bones, and carried downwards and next backwards, so as to make a flap of muscle, its edges corresponding with those of the retracted integuments. The remaining muscles were next divided transversely; in this division are contained the large vessels and nerves, which are those cut transversely. The bones were separated, the sharp angle of the tibia was sawn off, and the arteries secured in the usual way. The flap, when brought up over the face of the stump, was entirely and abundantly covered by skin: three sutures were used, assisted by two broad pieces of strapping. These are to be removed on the third day.

By performing the operation in this manner, Mr. Green says, you will usually secure a good stump.

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ON BENZOIC ACID IN URINARY DISORDERS. By JOHN SMITH SODEN, Esq.\*

Mr. Soden's attention having been drawn to the efficacy of benzoic acid in certain disordered states of the urinary organs, he was induced to give this medicine a trial at the Bath United Hospital; the following are the heads of four cases in which it was used in that institution.

*Case 1.*—A man, aged thirty-five, complained of frequent desire to make water, which had existed for a month; the urine deposited a mucous sediment. On passing a catheter the urine was found to be natural, but there was some hæmorrhage after the urine had been drawn off; some pain in the loins. Was first cupped on the loins, and aperients ordered; and then diosma and pareira brava, with opiates, were given in succession. At the end of three weeks, the bladder remained in the same state. He was then ordered to take the mixture, with benzoic acid and balsam of copaiba. In two days he was much better, in tea, quite well.

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\* Provincial Medical Journal, July 30th.

**Case 2.**—A married woman complained of frequent desire to make water; the urine depositing on cooling a whitish sediment; she had been under medical treatment at intervals during the last six months, without deriving any benefit. The benzoic acid mixture was ordered, and she was discharged cured, in three weeks.

**Case 3.**—A man aged fifty had suffered from symptoms of irritability of the bladder for about a month; the urine was acid, but deposited ropy mucous. He took the benzoic acid mixture with great benefit.

In the 4th case, the symptoms being nearly similar, great benefit was derived from the use of the medicine.

The form employed by Mr. Soden is as follows:—

Benzoic acid, one drachm:—

Balsam of copaiba, half-an-ounce;

White of egg, enough to form a mixture, with seven ounces of camphor mixture, Two table-spoonful to be taken three times a-day.

The medicine deserves a trial.

#### MIND OR MATTER? THAT IS THE QUESTION!

We regret to see that the phrenologists, like many people before them, have split into two distinct sects, as the following quotation from Dr. Elliotson's address to the London Phrenological Society, will show.

"It has appeared to us, that the very first axiom of our science is erroneous. 'The brain is the organ of the mind.'

"Mr. Combe states—'We do not in this life know *mind* as one entity and *body* as another, but we are acquainted only with the compound existence of *mind* and *body*, which act constantly together, and are so intimately connected, that every state of the *mind* involves a corresponding state of certain *corporeal organs*, and every state of *these organs* involves a certain condition of the *mind*.'

"A similar doctrine we shall find inculcated by almost all writers on Cerebral Physiology.

"This is mere assumption. We boast that our science is purely inductive, and yet in the enumeration of our axioms we assume a position all our facts tend to disprove. To evade the charge of materialism, we content ourselves with stating that the immaterial makes use of the material to show forth its powers. What is the result of this! We have the man of theory and believer in spiritualism, quarrelling with the man of fact and supporter of material doctrines. We have two parties: the one asserting that man possesses a spirit superadded to, but not inherent in brain—added to it, yet having no connexion with it—producing material changes, yet immaterial—destitute of any of the known properties of matter—in fact, an *immaterial something*, which in one word means *nothing*, producing all the cerebral functions of man, yet not localized, not susceptible of proof: the other party contending that the belief in spiritualism fetters and ties down physiological investigation—that man's intellect is prostrated by the domination of metaphysical speculation—that we have no evidence of the existence of an essence, and that organized matter is all that is requisite to produce the multitudinous manifestations of Human and Brute Cerebration.

"We rank ourselves with the second party, and conceive we must cease speaking of 'the mind,' and discontinue enlisting in our investigations a spiritual essence, the existence of which cannot be proved, but which tends to mystify and perplex a question sufficiently clear, if we confine ourselves to the consideration of organized matter—its forms—its changes—and its aberrations from normal structure."

"We contend that MIND has no existence."\*

We were told by a man of no mean note (Berkley) that *matter* had no existence. And now Dr. Elliotson has stepped forward to deny the existence of mind!! Truly, between these two great philosophers, we are likely to be choused out of our existence entirely! Well! never mind—no matter. It is clear that we have neither souls nor bodies—spirit nor substance! We are worse off than the ghosts that crowd CHARON'S frail boat—imponderable, intangible, invisible—but still having a *spirit* that escaped from the "organism" above ground!

Does it not occur to Dr. Elliotson that there is a serious responsibility attached to this doctrine? No, he says. TRUTH never can do harm—and VERITAS prevalebit. But is Dr. E. sure that his doctrine is the true one, and that the opinions of all nations and all ages, were the baseless fabrics of visionary superstition?

Granting, *argumenti causa* (what we otherwise deny) that there is no soul—no future state of existence—no rewards or punishments beyond the grave—no truth in natural religion nor in revelation—no difference between a man and a monkey, except a larger head and deficiency of tail—what then? Is the mass of mankind, half of whom, at the least, are plentifully supplied with vicious organs and propensities, prepared for the reception of such doctrines, at the present time, or likely ever to be so? Does he believe that the mere terror of the rope, the dungeon, or the penal settlement, would be sufficient to deter the multitude, or even the enlightened, from crime, if all moral and religious apprehensions were unanimously voted to be bug-bears? We will admit further, for the sake of argument, that human laws and human reason are quite sufficient for the government of society, without any reference to religious obligations. Dr. Elliotson must have seen some hundreds or rather thousands of suffering fellow-creatures, on their beds of sickness and on their death-beds, whose pains were mitigated, whose agonies were soothed, whose fortitude was sustained, and whose dying prospects were illumined by the power of faith, and the hope of immortality!!

"Fading Hope, when life's last embers burn,  
When soul to soul, and dust to dust return,  
What though each spark of earth-born raptures fly  
The quivering lip, pale cheek, and closing eye!  
Bright to the soul thy seraph hands convey  
The morning dream of life's eternal day!"

And would Dr. Elliotson and his band of phrenological MATERIALISTS dash this last cup of enjoyment from the lips of those who have no other stay or consolation on earth, and thus—

"Hurl the poor mortal trembling from the stage!"

without a ray of hope from the promised blessings of DIVINE REVELATION! For our own parts, were we the most determined Materialists, Deists, or even Atheists, the mines of Golconda would not bribe us to poison the chalice of sorrowing and afflicted humanity in their dying hour, or shake their faith, by engendering doubts in the pious Christian. What right has the cold-blooded MATERIALIST to disturb the creed of Jew or Gentile—of Christian or Mahometan, by thrusting his grovelling and debasing doctrine of annihilation down their throats? The belief in a future state of existence—of rewards and punishments there, even if totally visionary, has an ennobling influence, and pours the balm of consolation daily into the tortured breasts of millions and millions of human beings! Has the SCEPTIC no bowels of compassion on these his fellow-creatures?

CASES, WITH OBSERVATIONS ON CERTAIN MALIGNANT DISEASES OF THE  
HEAD AND FACE. By L. BYRON, M.D.\*

*Melanosis of the Eye.*

After briefly noticing the discrepancy which prevails amongst pathologists as to the malignancy or non-malignancy of this affection, Dr. Byron proceeds to the relation of several cases.

Case 1. *Medullary Fungus, combined with Melanosis.*—L. Keenahan, æt. 4, of fair complexion, admitted into the Meath Infirmary, January 2, 1826. The right eyeball is much enlarged, so as to form a circular, florid tumour, of the size of a small apple. The upper half is concealed by the eyelid, which is of a dark erysipelatous colour, the lower half is exposed. The tumour is soft, but firm and elastic; on its front is seen the cornea, opaque, disorganized, and superficially ulcerated; with slight muco-purulent discharge. No pain, except when the tumour is pressed upon; natural functions little disturbed. The disease was said to have commenced two months previously, as ordinary ophthalmia; in a fortnight the ball began to swell, this was accompanied by considerable pain. Vision was lost at an early period; the tumour has enlarged rapidly. His bowels and diet were regulated, and emollient applications made to the tumour. At the end of a fortnight, the health was much improved, but the tumour had increased in size; it was now of a uniform, florid, fungous appearance, with a depression in its centre. Some bleeding occasionally.

On the 20th January, the eye was removed; very little blood was lost, and the patient bore the operation well.

*Examination of the Tumour.*—The diseased structure presented a good specimen of fungus hæmatodes. It consisted of three lobules; the first, of the size of a pigeon's egg, occupied the seat of the lachrymal gland; the second, of about half the size, lay on the inner side of the orbit; whilst the third and smallest, extended backwards, enveloping the optic nerve and recti muscles, no distinct traces of which were visible. A cavity in the centre was filled by a soft black substance, of the consistence of thick cream, half putrid and very fetid. The sclerotic coat was almost the only vestige remaining of the healthy eye. On cutting into the tumour, its structure was found to be uniformly whitish and semi-cartilaginous. The conjunctiva was thickened, but free from any participation in the disease.

Some fever followed the operation, which was soon subdued. On the 10th day, granulations were seen shooting from the floor of the orbit; and on the 18th the cavity had diminished by one-half. On the fortieth day, however, an unfavourable change took place, he began to look less healthy, and the left eye became amaurotic. On the fifty-eighth day he complained for the first time of pain at the back of the head, and in the right orbit. From about this time the pain in the head increased, the growth of the granulations became arrested, till, on the seventy-fourth day, there was excruciating pain at the back of the head. Livid tumour of right lower eyelid; extreme dilatation of pupil of left eye; pulse 120, small and weak; countenance anxious. In this state he was taken home, where he died in a few days. Dr. Byron was not allowed to examine the body.

Case 2. *Melanosis of the Eye, uncombined.*—*Operation.*—*Cure.*—This case has already been related in this Journal,† we shall not, therefore, repeat it.

\* Dublin Journal, July, 1842.

† Med. Chirurg. Rev. No. 72.

**Case 3. *Melanosis, combined with Scirrhus of the Globe.***—Rose M'Cabe, æt. 55, of light complexion, admitted August 10th, 1837. About two years ago she discovered a defect in the sight of the left eye. A red fleshy tumour soon presented itself upon the conjunctiva near the cornea, which gradually extended, involving the globe and destroying the sight, which was totally lost about eight months after the disease commenced. There was not much pain till about four months prior to admission, when it became sharp and lancinating, shooting from the eye towards the occiput. On admission, the upper eyelid was tumid and projected, so as to expose about one-third of the swollen globe. The conjunctiva was much chemosed, its secretions apparently healthy. The cornea was opaque and involved in indurated fleshy tubercles, which occupied the whole of the anterior circumference of the globe, and extended as far backwards as the finger could discover. A small portion of the cornea was tolerably clear.

The eye was extirpated on the 20th August. On cutting into the tumour in the upper eyelid, about half an ounce of perfectly black fluid flowed out; the entire of the back part of the orbit was found occupied by the same kind of matter, in which the optic nerve appeared to float. The nerve was not thickened, but near its union with the globe, it was lessened in size, and corroded in two places.

The scirrhous indurations of the globe did not extend so far back as the entrance of the optic nerve. The hyaloid membrane was filled with black fluid, similar to that mentioned above. The lachrymal gland was partially indurated.

The case proceeded favourably, and in a month's time she was discharged well. About two months afterwards, however, she again presented herself, with cancerous ulcerations of skin of the temple, eyelids and cheek, and extended nearly to the bottom of the socket, but there was no return of the melanosis. She returned home, and died about three months afterwards.

**Case 4. *Melanosis combined with Scirrhus of the Globe.***—Michael Monaghan, of dark complexion, admitted February 6th, 1838. States that about eighteen months ago, he lost the sight of the right eye; six months afterwards he perceived what he calls a pearl upon the cornea, this has grown very rapidly within the last four months, and is accompanied by intense pain, confined to the eye, temple and forehead. At present the ball protrudes in an irregular tuberculated form, of a dark reddish colour, and discharges dark fetid ichor which excoriates the cheek. The cornea can be seen imbedded in the disease, and is tolerably clear. The tumour is of about the size of a small orange, firm and unyielding to the touch.

The operation of extirpation was performed, at his anxious desire, on the 12th of February. The pain left his head a few hours after the operation, and in five weeks the orbit had healed; he did not, however, regain flesh or strength. Two months afterwards, he began to complain of cough and pain in the hypochondria, and gradually sunk and died, apparently from exhaustion. On examining the body, five circumscribed black tumours were found on the chest and abdomen, containing a paste-like matter, of a deep brown colour, unorganised, and rendered cohesive by a small portion of fluid. The brain was healthy, as were all the bones forming the walls of the orbit.

**Chest.**—The surface of the lungs was clotted over by a number of melanotic tumours of various sizes, situated immediately under the pleura which formed a partial covering or capsule. The lung around was softened, and more or less black.

**Abdomen.**—The liver presented four large melanotic tumours upon its convex surface, similar in all respects to those in the lungs.

**Remarks.**—The malignant disease of the eyeball are usually considered to be



three in number, viz. cancer, fungus, and melanosis; the two former being distinct; the latter frequently associated with either of the others.

"The first is distinguished as attacking the old; making slow progress; seldom attaining a large size; being accompanied by lancinating pains; and eventually extending to the eyelids and lachrymal glands, and presenting at last a true cancerous ulceration." On being cut into, it is found to be firm and of fibrous or striated texture.

Fungus hæmatodes usually occurs in very early life, and is divisible into three stages. In the first, the pupil is dilated, having at its bottom a peculiar yellow appearance, and the front of the ball is unchanged. In the second stage, the sclerotic is discoloured, and irregular on its surface; the eye appears enlarged, and pain and inflammation have set in. In the third stage, the tumour has forced its way through the sclerotic or cornea, grows with great rapidity, and appears as a dark red fungus, irregular, soft, easily torn, and bleeding readily. On section, it is found to be brownish white, nearly destitute of fibres, and resembling brain in consistency and appearance.

Melanosis of the eye presents few symptoms peculiar to itself, and it is not till it has protruded through the tunics, that the exact nature of the disease can be determined. Then, however, dark livid tubercles show themselves on its surface at different points, soon degenerating into a black fungous mass, which speedily ulcerates, sloughs and bleeds, distending the lids, and forcing its way between them. The discharge is usually thin and of a dark colour. If the disease is uncontrolled, it generally extends to the brain and the patient dies comatose.

On examination after removal, all traces of normal structure are said to be lost in the diseased mass, the greater part of the cut surfaces presenting a deep sooty colour, more or less intermixed with black or brown.

With regard to the propriety of operating in these cases, it would appear that the circumstance of melanotic disease being present, should be no bar, as the fact of melanosis not recurring in any of the cases which have just been recorded, is a proof its non-malignancy, and of the light estimation in which it may be held as regards an operation.

In extirpating an eye, Dr. Byron thinks that a simple scalpel is all that is required for its performance: the fingers and thumb of the left hand of the operator serving in place of forceps, but for the division of the optic nerve, where the disease has acquired much bulk, that part of the operation will be best performed by a knife with a lateral curve. Dr. Byron has never found it necessary to transfix the eye to keep it steady during the operation, but what he deems of great importance is, the speedy removal of charpie or lint, where such have been used to restrain bleeding. A piece of lint torn longitudinally, and laid in the wound may be removed easily from eight to twenty-four hours after the operation. Water-dressing with or without light stuffing of oiled lint, as the case demands, is all that should afterwards be used.

*Case of Fungus Hæmatodes of great size, extending within the cranium, without pain, and unaccompanied by Paralysis or disturbance of the Mental Faculties.*

H. O. R. æt, four years and-a-quarter, appeared, about Christmas, 1837, to have taken cold, his breathing was laborious, there was some cough, with discharge of white mucus from the nares; the extremities were cold, the bowels disordered. On the 20th of January, there was slight strabismus of the right eye with drooping of that eyelid; the pulse had become feeble and irregular. On the 25th, the doubtful appearance of his eye was more decided; the upper eyelid covered two-thirds of the ball, and was immovable, the eye turned upwards and fixed, the iris acting but sluggishly. Sense of smell absent; hearing very acute. Little or no pain in the head.

February 2nd. The sight is suddenly lost; both eyes are fixed and immoveable, with the lids hanging over them. The two front incisor teeth are sepa-

rated, and a dark-coloured firm elastic tumour has appeared in the line of the palatine suture. The fungoid nature of the disease was now apparent. From this time all the symptoms advanced rapidly, but with regularity; the tumour in the palate protruded outside the mouth to the size of a goose egg; the eyes lost their brilliancy and were converted into two dark-coloured fungi. The nasal and malar bones could be distinctly felt floating wide apart, on this sponge-like mass of disease. His head was thrown back in order to allow of the passage of air; deglutition was performed with tolerable facility, and he could articulate intelligibly. His mental faculties remained perfect till his death, which occurred on the 22nd of March.

*Autopsy.*—The skull-cap adhered firmly to the dura mater. The surface of the hemispheres was vascular, and the arachnoid and subarachnoid tissues had lymph effused in several places. The brain itself was firm, but vascular; some fluid in the ventricles. On raising the anterior lobes of the cerebrum, a firm elastic tumour, covered by dura mater, presented itself, in extent and bulk equal to the segment of a goose-egg, and occupying the space from the anterior edge of the cribriform plate and the foramen magnum. In raising the dura mater, which adhered firmly, a whitish-looking mass, but little elastic, and in some places semi-cartilaginous, was seen; on section, the tumour displayed some black spots or patches of equal density with the rest of the disease.

The sutures between the temporal and malar bones were open on both sides, as were all the sutures of the orbit and face, as well as the coronal suture. No trace of the os planum or os unguis could be discovered. The eye was totally disorganised, some black matter, apparently corresponding with the choroid coat and pigmentum nigrum, was found in the centre of this part of the disease. The seventh pair of nerves passed over the tumour and remained untouched.

The open state of the sutures will explain in some measure, the manner in which the brain eluded the ill-effects of pressure, which would otherwise have occurred from the growth of the diseased mass within the cranium; yet, as the necessity for this change must have occurred before the change took place, it is difficult to account for the very slight functional disturbance which took place.

*Malignant Osteo-sarcoma of the Lower Jaw-bone; Excision and Disarticulation thereof.*

Anne Lynch, æt. 47, was admitted into the Meath Infirmary, June 2nd, 1828. About twenty years ago she had the last molar tooth on the right side extracted; soon afterwards a small tumour formed in this situation. Twelve years ago, the part was irritated, and from this period the tumour increased, but so slowly as to occasion little inconvenience, up to May last.

At present, the jaw on the right side is considerably enlarged; the soft parts appear healthy, the disease being confined to the bone, from the alveolar process of which has sprung up a fleshy fungous growth, occupying the space from the second molar tooth to about the angle of the jaw.

Caustic was applied to the part, and she was discharged, but returned in the October following, her health being now considerably impaired. The tumour is much increased in size, bleeding freely and giving out a thin fetid sanies.

On the 6th of October, the diseased mass was removed. After extracting the incisor tooth on the affected side, an incision was made through the soft parts down to the bone in a line with the socket of the extracted tooth, terminating about a quarter of an inch below the chin. The next incision commenced a little anterior to the lobe of the ear, and terminated over the angle of the bone. These two incisions were then united by a third. Having divided the bone in a line with the first incision, the integuments were separated so as to disengage the tumour as far backwards as the angle of the jaw, where the bone was again divided by a chain saw, the bone here consisted only of a thin shell. As the entire of the disease was not included in the detached piece, it became necessary to

remove the ramus with the articulating extremity of the bone, which was done with some little difficulty. The divided extremities of the facial and transverse facial arteries were secured; but little blood was lost. The lips of the wound were brought together by sutures. Water-dressing to the wound, and an anodyne draught were ordered. No compression was made upon the carotid artery, nor was it in any way molested.

*Examination of the Disease.*—The bone is enlarged to about the size of a turkey's egg, but of an irregular oblong shape, extending from the first molar tooth to the articulating extremity of the bone. The bone is hollowed out, and is totally absent on the aspect of the alveolar process, which was occupied by the foul excrescences already described. This latter, was continuous with a mass of the disease which occupied about two-thirds of the cavity. Its surface in some places exhibited a very minute vascularity; smooth, but irregular and tuberculated. The part traversed by the chain saw was made up of a brain-like matter, combined with a firmer granular substance, containing various cysts, the walls of which were made up of spiculæ of bone. These cysts contained a firm, white, gelatinous substance, which, however, was easily removed, leaving the walls or internal surfaces smooth, white and irregular.

The case did well, and the subject of the disease is now, eleven years after the operation in good health.

Dr. Byron, draws the following conclusions on the subject of osteo-sarcoma of the lower jaw-bone.

“1st. The disease almost always commences in the cancellated structure of the bone, and has usually, if not always, a cystic origin, which it maintains, more or less perfectly, throughout its entire growth.

2nd. The disease is always (as far as recorded facts go) mild, under the ages of 28 or 30 years, and although it does not necessarily become malignant after that period of life, still it frequently does so; ultimately involving the soft parts in its neighbourhood, and *uniformly* assuming the character of carcinoma.

3rd. Osteo-sarcoma of the lower jaw-bone is almost always curable by free excision before the soft parts become involved in the disease, which they never do in the benign form of the disease, nor for some time, often several months, after it has changed into carcinoma, or the malignant form.

4th. That cancer of the face, especially the bones, admit of cure more frequently than when seated in any other part of the human frame; cancer scroti perhaps excepted.

5th. Ligature of the carotid artery is unnecessary previous to or during the operation of disarticulation of the jaw-bone.

6th. Stuffing the wound with charpie or lint seems to be, in most cases, unnecessary, and if permitted to remain in the wound beyond eight or ten hours, would most likely excite undue inflammation. No contrivance seems requisite to prevent a retroversion of the tongue upon the pharynx and epiglottis when the bone is divided posterior to the mental attachment of the digastric and anterior fibres of the mylo-hyoidei muscles, as will generally be the case, nor will any contrivance prevent the trifling retraction of the muscles of the face occasioned by their division and want of support.”

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#### OBSERVATIONS ON HYPERTROPHY OF THE BRAIN IN CHILDREN.

By CATHCART LEES, M.B.\*

Although the much greater development of the brain in some cases than in

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\* Dublin Journal, September, 1842.

others, as well as its apparent disproportion to its osseous case, has been occasionally noticed by pathologists, yet it is only within the last few years that the attention of the profession, has been directed to whether this condition might not be ranked as a peculiar abnormal state, presenting a group of special symptoms.

The facts hitherto adduced have been such as would tend to excite inquiry rather than produce conviction as to its existence. Though many distinguished authors have slightly alluded to the subject, yet as no points of diagnosis have been laid down to distinguish this state from chronic hydrocephalus, the disease with which it is most likely to be confounded, Dr. Lees has been induced to bring forward some cases which have occurred among the children of the institution to which he is attached, and which may assist in establishing certain data on which to found future observation, as with the exception of Dr. Munchmeyer, of Lunebourg, this peculiar state (as occurring in children) does not appear to have met with the attention which it merits.

*Case 1.*—John Harding, æt. two years, was admitted in May, 1842, for pertussis; his mother states that he has always been healthy, but very *heavy* and *drowsy*; his appetite has always been *great*. His head is rather larger than it ought to be in proportion to his age, particularly across the parietal protuberances; fontanelles perfectly ossified; eyes prominent; intelligence perfect, but appears *apathetic*; the paroxysms of the cough were very violent, and frequently succeeded by convulsions, which were general, and in one of which he died on the sixth day of his disease.

On removing the calvarium, the dura mater appeared to be tense, and on dividing it, the cerebrum appeared swollen, and protruded through the membranes; the convolutions were flattened; the pia mater injected with red blood; substance of the brain, which was very large, firm; there was no effusion in the ventricles; bronchial mucous membrane vascular; a few dark, firm spots, like the clots in pulmonary apoplexy, scattered through the lungs, and quite isolated; the nerves were carefully dissected, and presented nothing abnormal.

*Case 2.*—Anne Murphy, æt. 3, a delicate child, with head large in proportion to the body, which is emaciated, particularly the lower extremities; the abdomen is tumid; considerable projection of the frontal bone, as also of the posterior angles of both parietal bones; the eyes are heavy and widely set; the fontanelles closed, but cartilaginous; spends her time in crying, eating, and sleeping. Her intellect is obtuse, but appears to be perfect. Pulse generally regular, pupils natural. Her death took place in some months time, from chronic diarrhœa, without convulsions.

The brain weighed 2lb. 3oz.; the dura mater was firmly adherent to the cranium; the brain was large, the dura mater being rather tense over it; the substance of the brain was firmer and paler than natural; there was no fluid in the ventricles, nor at the base of the brain; in fact, it appeared to be nearly void of either blood or serum.

*Case 3.*—Mary L., æt. 7, delicate complexion, appears as if she is always dropping asleep; pupils natural, pulse regular; her temper is very bad, she will not learn her lessons, but this appears to depend more on indolence than on stupidity; appetite very great; the head is not too large in proportion to the body, but there is considerable projection across the parietal protuberances; complains frequently of headache, and sometimes vomits in the morning.

If we classify the symptoms which the above cases presented, we see that, with regard to intelligence;—

There was a peculiar *obtuseness of intellect*, characterised chiefly by *apathy* to external objects, and a great tendency to drowsiness. There was also evinced a *peculiar irritability of temper*.

The appetite was very great in all the three cases, and there existed the peculiar projection of the parietal protuberances, on which Dr. Munchmeyer particularly insists, and which may prove a valuable guide in aiding to discriminate this state from chronic hydrocephalus, with which disease it is most frequently confounded.

Thus Dr. Hennis Green, in an excellent article on the subject, states that he recently had seen a child who had been condemned to death by a medical man, as having water on the brain, but which was a case of simple hypertrophy, and which did not interfere with the health of the child. The diagnostic sign is, the sense of firmness communicated to the finger on pressure over the fontanelles, in cases of hypertrophy, as contrasting with the fluctuating feel in cases of chronic hydrocephalus; but this could only apply in cases of very young children, or in extreme cases.

The prognosis in children is not necessarily unfavourable, the chief danger, in fact, arises from the occurrence of other diseases, as those attendant on dentition, the exanthemata. The causes of this state are very obscure, but are probably dependent on, or connected with struma; and although the observations which have been hitherto published with regard to this state, bear reference to it as chiefly occurring in adult life, yet we must regard it as the result, either of an abnormal development of the brain, excited before birth, or depending on primary organization. For as Tiedemann and Valentine have established that the fetal brain is one of the heaviest and most vascular organs of the body, but presenting little trace of organization, the primitive type may continue for some years, and thus give rise to hypertrophy, which may remain for a considerable time without interfering with the general health, unless there be either an increase of intensity in its action, or some acute disease supervenes. Thus bearing out the general law of hypertrophy, viz. that the functional disorders which it entails only extend beyond the affected part, according as the part itself extends its sphere of action, thus differing from other organic lesions which soon affect the whole economy, wherever may be the seat of the disease.

OBSERVATIONS ON DISCOLORATION OF THE SKIN FROM THE INTERNAL USE OF NITRATE OF SILVER, AND ON THE MEANS OF PREVENTING AND REMOVING THAT EFFECT. BY CHARLES PATTERSON, M.D.\*

Nitrate of silver is undoubtedly a medicine of great service, especially in the treatment of various spasmodic diseases, but the danger of producing discoloration of the skin by its internal administration, prevents its employment as extensively as might otherwise be the case. It must therefore be an object of importance to devise some means of preventing that untoward effect.

Dr. Patterson first quotes the opinions of Dr. A. T. Thomson on the subject, who supposes that the nitrate is taken into the circulation undecomposed, and, arriving in that state at the capillaries of the skin, is there decomposed, and converted into chloride of silver, which is deposited in the rete mucosum. The chloride, he says, acquires a grey, leaden colour, from its contact with animal matter; and as it is insoluble, it is incapable of being re-absorbed, is fixed in the rete mucosum, and a permanent stain is given to the skin. Dr. Thomson suggests that, by ordering diluted nitric acid, at the time of administering the salt, its decomposition may be effected.

In opposition to these views of Dr. Thomson's, Dr. Patterson quotes various experiments which he has made, and then brings forward his own conclusions, viz. that the chloride of silver is not the colouring ingredient on which the

blackness of the skin depends; but that the discoloration of the skin is most probably owing to the decomposition of the chloride of silver circulating in the cutaneous tissue through the chemical action of the sun's light, and the deposition there of its metallic basis. All persons are not subject to this accident; for the influence of the sun's rays can only be effective in those cases where the cutis is more than ordinarily vascular and is clothed with a thin transparent cuticle.

The permanence of the stain is not easily accounted for; but it would seem that the metals constitute one class of substances for which the absorbents have no attractive affinity, as is shown in those instances where bullets have remained for years in the body, in the use of metallic ligatures, and in the internal exhibition of quicksilver.

#### *Means of Prevention—Nitric Acid.*

Dr. Patterson considers that the contemporaneous administration of nitric acid, with the intention of preventing the decomposition of the nitrate of silver, must be entirely useless. The nitric acid undergoes decomposition in its passage through the circulation, and consequently can hardly reach the surface of the body to influence the chemical changes there in operation; and even if it did, and met with nitrate of silver there, its action would be to promote and not to retard the formation of the chloride of that metal; for this reason, that coming into contact with the soluble muriates, it would decompose the muriatic acid, with evolution of free chlorine.

The conclusion to which Dr. Patterson comes on this subject is, that the only way to prevent all risk of discoloration, would be to substitute for the nitrate, some preparation of silver, not liable to be acted on by chlorine, or the sun's light. And happening to be employed in some photographic experiments, his attention was directed to the property displayed by solutions of the iodide of potassium in rendering nitrate of silver insensible to the influence of the sun's rays. When a piece of paper was washed with solution of nitrate of silver, and then immediately immersed for a few seconds in a solution of hydriodate of potash, its colour, even when exposed to the strongest sunshine, remained unaltered. It was evident, in this process, that the hydriodate and the nitrate were both decomposed, and that an ioduret of silver was the result. It then remained to be determined whether, in contact with animal matter or medicinally administered in combination with chemical agents, it would retain that power.

To ascertain this point various experiments were executed;—the ioduret was mixed with different animal and vegetable substances, and submitted to the action of different chemical agents, and then exposed to the action of the sun, without, however producing the least change of colour.

Having thus satisfied himself as to the chemical habitudes of the ioduret, Dr. Patterson's next endeavours were directed to ascertain its therapeutic effects. The first and principal class of diseases in which opportunities were afforded of administering it, were those various stomach affections to which the Irish peasantry are so very liable, and in which the internal use of nitrate of silver has been found to be most generally successful. They, therefore, afford the best criterion whereby to judge of the comparative efficacy of the ioduret. In such, a number of which Dr. Patterson relates, it proved almost uniformly beneficial. In epilepsy the result was not so satisfactory; but as the medicine was only administered in two cases, it has not had a fair trial in that disease. In whooping-cough it had variable success, but where that complaint was uncomplicated with fever or bronchitis, the ioduret appeared to produce an immediate improvement in the spasms, and hastened the final abatement of the cough. Sufficient time, however, has not yet been afforded, to allow of any definite conclusion to be come to on the subject.

*Removal of Discoloration of the Skin.*

Dr. Patterson considers that "there can scarcely be a doubt that in those cases, where the skin has become discoloured from the long use of nitrate of silver, the discoloration may be removed by the internal and external employment of suitable preparations of iodine."

The following is the formula which Dr. Patterson employs for the administration of the ioduret of silver.

℞. Iodureti Argenti,  
Nitratis Potassæ, ʒʒ gr. x.,  
Tere simul ut fiat pulvis subtil. dein adde  
Pulv. Glycyrrhizæ ʒss.  
Sacchari Albi ʒj.  
Mucil. Arab. q. s. M.  
Fiant pil. xl. quarum sumat æger j. ter in die.

ON THE USE OF THE IODIDE OF POTASSIUM IN OPHTHALMIC DISEASES, WITH CASES. By ISAAC PARRISH, M.D.\*

During a recent term of service at the Wills' Hospital, an opportunity occurred to Dr. Parrish of employing this remedy, the full properties of which are scarcely as yet known in some diseases of the eyes, having a constitutional origin, or closely allied to a scrofulous or cachectic condition of the general system, and the results, he says, though employed in too limited a number of patients, to warrant a general conclusion as to its powers, were so striking and satisfactory, as to create a strong impression in its favour.

If this medicine can be safely employed as a substitute for mercury in many diseases of the eye, especially in cases where the state of the constitution renders a resort to mercury hazardous, it will constitute a most valuable auxiliary in the treatment of a numerous class of cases, which are exceedingly difficult to cure.

The dose in which it was administered was from two to six grains, three times daily, in a tablespoonful of the compound syrup of sarsaparilla. The selection of the latter article as the vehicle, constitutes probably an important item in the treatment.

The two following cases are selected, as exhibiting the most decided influence of the remedy under circumstances somewhat embarrassing.

*Case 1.*—William Boyle, æt. 23, was admitted into the Wills' Hospital in the latter part of November, 1841, for granular ophthalmia, from which he had been suffering for four months, and which had been treated on a rigid antiphlogistic plan, with the continued application of emollients to the eyes.

Soon after his admission into the hospital, the inflammation of the conjunctiva became more acute; this was relieved by local depletion from the temples, cooling lotions, &c.; after which the sulphate of copper was applied to the inner surface of the lids; he was placed on a good diet: took syrup of the iodide of iron, &c., under which treatment the eyes rapidly improved. He soon after suffered from another relapse, attended with inflammation and ulceration of the cornea, severe circumorbital pain, with a feeble pulse, and pallid countenance, from which he soon in a great measure recovered. Soon afterwards however he again relapsed, and when he came under the hands of Dr. Parrish, his condition is stated to have been quite deplorable.

He was suffering from deep-seated pain in the head and round the orbit, aggravated at night, and preventing sleep, except under the influence of powerful anodynes; the eyes were highly injected, the sclerotic coat, cornea, and iris being involved. Much intolerance of light and very little vision. The pulse was feeble, skin cool and relaxed, countenance dejected. Some amendment took place from the employment of quinine with the extract of cicuta, counter-irritants to the nape of the neck, anodynes, nutritious diet, &c. This however was of short duration. In the early part of February, erysipelas appeared round the eyelids, rapidly extending over the face, and accompanied with delirium, furred tongue, and feeble pulse. As the eruption declined, the pain in the head diminished, and the condition of the eyes improved, but still the circumorbital pain continued violent, especially at night. A slough was extending on the cornea of the right eye; great intolerance of light, with vascularity of the conjunctiva and cornea continued. The strength of the patient was much reduced; appetite bad, countenance anxious; skin relaxed and pallid; anodynes produced but little benefit; the stomach was irritable and rejected tonics, and fears were entertained that vision would be much impaired, if not lost, by the still active disease of the eyes. It was under these circumstances that the iodide of potassium was resorted to.

An improvement was manifest in less than forty-eight hours, and the pain vanished in a short time, the patient slept soundly without anodynes, strength and appetite rapidly improved, and for the first time since admission he was unaffected by changes of weather.

The application of a solution of the nitrate of silver to the eyes, together with the improvement of the general symptoms, produced a corresponding change in the local inflammation, and when Dr. Parrish left the house, but little doubt existed that he would recover the use of his eyes. He was still taking the remedy in doses of six grains three times daily, and had not suffered from pain in the head since he commenced it.

*Case 2.*—James Dougherty was admitted in October, 1841, for chronic conjunctivitis, which had existed for a considerable time. He complained of a steady dull pain in the side of the head, over the parietal bone, which extended at times over the scalp, and was often very acute. The pain was aggravated at night, was attended with excessive intolerance of light, injection of the conjunctiva, sclerotic and cornea. The patient was greatly affected by changes of weather; much constitutional irritation.

The usual local applications were of no avail; nor did any treatment appear to produce permanent benefit. After trying a great variety of remedies for more than two months, it was at last resolved to administer the iodide of potassium. The change which ensued was surprising. In two or three days the pain was greatly alleviated, so that the patient was able to sleep without anodynes. The appetite increased, and the general health was much improved. The pain disappeared altogether, the injection of the eyes and the intolerance of light were rapidly diminishing, and when Dr. Parrish left the patient under the care of his successor, the prospect of his speedy recovery appeared very encouraging.

*Remarks.*—The most striking benefit which the iodide appeared to produce, was its influence on the severe neuralgic pain, from which the patients had so long suffered. The relief was speedy and permanent, and as a consequence of this immunity from suffering, tranquil sleep was enjoyed, the appetite and strength returned, and the local inflammation subsided.

The remedy was tried in several other cases of strumous inflammation of the eye, in all of which its effect was happy, except in one instance. This was the case of a young woman with serofulous iritis, in whom the medicine produced severe vomiting and purging, and could not be borne even in two-grain doses.



In the case of a young woman with strumous conjunctivitis, in which the cornea and iris were slightly involved, secondarily, the iodide produced a much more steady and rapid improvement than is usual in this form of disease.

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CASE OF PENETRATING WOUND OF BOTH LUNGS.—RECOVERY.]

By A. N. RUDDOCK, Esq.\*

Early in the morning of the 10th May, 1838, a police constable, named Silas Perrott, aged 22, detected a housebreaker robbing some premises which stood in a very retired situation. The policeman attempted to take the man into custody, which he strenuously resisted, and a struggle ensued, during which the latter attempted to throw him into the river, and at last, finding he was likely to be apprehended, drew a long knife with a wooden handle, similar to that used by shoemakers, and gave the constable two desperate stabs in the body.

When seen by Mr. Ruddock, about two hours afterwards, he was tolerably collected, but in a state of extreme exhaustion from the severe nature of the wounds and the consequent loss of blood, which was considerable; much frothy blood was passing from his mouth; he had great difficulty of breathing, with constant cough, and a very small pulse, varying from 140 to 150.

On the right side of the chest was found, on examination, a penetrating wound of rather more than an inch in width, between the seventh and eight ribs, about four or five inches below, and in a direct line from the axilla; air was passing freely through the wound, and there was considerable emphysema. On the left side there was a corresponding wound, also, between the seventh and eight ribs, but higher up and more posterior; very little air had escaped into the cellular membrane, but it could be felt crackling underneath a considerable portion of the latissimus dorsi. No doubt could exist as to the lungs being wounded on both sides. As there was no fracture of the ribs, and the wounds were clean, they were closed with adhesive plaster, warmth was applied to the extremities, and some tea administered.

By nine o'clock, A. M., re-action had taken place, and his pulse had become tolerably steady at 120. Venesection to twenty ounces; a mixture of spermaceti and ipecacuanha wine to be taken every three or four hours: fever diet.

At three. P. M., he was labouring under more severe symptoms: his breathing was much oppressed; he had a good deal of pain and uneasiness about his chest, with a full pulse. Venesection to thirty-four ounces, this afforded much relief. At nine in the evening, the symptoms becoming again aggravated, thirty ounces of blood were taken, and some opium administered.

On the following day he was much better, and on the 12th of May, two days after the receipt of the injury, the wounds of the lungs had apparently closed, no air passing through them. From this time he slowly but gradually progressed, and left his bed about three weeks after the injury. The bloody expectoration continued for five or six days, and the emphysema gradually subsided. The wound on the right side of the chest did not heal for a month. Adhesion of the pleura on the right side took place to a considerable extent, covering a space as large as the hand: on the left side, the state of the parts is not so easily ascertained, owing to the thick layer of muscle.

Since that time he has had several attacks of shortness of breath and pain in the side, but they have all given way to a day's confinement in bed, and a mixture of tartar-emetic. These attacks have lately been less frequent.

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\* *Provinc. Medical Journal*, April 2, 1842.

CASE OF TUBARIAN GESTATION, WITH RUPTURE OF THE CYST CONTAINING THE EMBRYO, &c. By R. M. GLOVER, M. D.\*

The subject of this case was aged 39, of stout habit; she had been married for the second time for three months. Since her marriage she had not menstruated, though previously she had been regular. During her first marriage she had three miscarriages, but never bore a viable child.

On the 30th of November, 1841, she complained of bearing-down pains in the back and abdomen, with slight bloody discharge from the vagina. On examination, the lips of the uterus were found rather tumefied but close. The pulse was but little affected, the tongue clean. A gentle aperient and anodyne draught were administered and the pains ceased.

In the afternoon of the next day she had a similar attack, when the same treatment was renewed with equal success. This time a few fibrinous shreds were passed with the bloody discharge which was very slight.

About 3 P. M. on the 2nd of December, she was suddenly attacked with excruciating pain in the lower part of the abdomen. When seen by Mr. Dixon, she was in a state of collapse, extremities cold; rigours; lower part of the abdomen extremely painful on pressure; pulse about 80, scarcely perceptible; tongue clean. On examination per vaginam, the lips of the uterus were found less tumid. A draught of laudanum and ether was ordered. Soon afterwards she had severe vomiting, a watery fluid being ejected from the stomach with great force. In the evening, when examined by Dr. Glover in consultation with Mr. Dixon, she remained in much the same state. The abdomen was every where painful on pressure, especially inferiorly, where it had a doughy feel; superiorly, there was some tympanitis. Great pain was especially felt over the iliac fossæ. There was now no discharge from the vagina. The pupils were dilated, and the patient in a state of partial stupor.

The symptoms of depression continued to augment, she lay during the next day in a state of insensibility, and died at 6 P. M.

*Post-mortem appearances.*—No external sign of pregnancy was observed.

On opening the peritoneum, a large clot was perceptible, occupying the space from the umbilicus in front downwards into the pelvis. The intestines exhibited some traces of inflammation. The pelvis and iliac regions and posterior part of the abdomen contained a quantity of dark-coloured fluid blood, estimated at about two pounds, while the clot might weigh three-quarters of a pound. No ruptured vessel could be detected, but a sac of the size of a walnut was found where the left Fallopian tube joined the uterus; its interior surface communicated with the peritoneum by an irregular shaggy opening, and by adherent clots, which could be pulled from openings resembling those of veins. The uterus and its appendages were carefully removed and examined subsequently.

The uterus was somewhat enlarged, and its lips slightly tumefied; on being opened, it was found to be lined by the decidua apparently of very recent formation, to within three or four lines of its orifice. This membrane was red, soft and spongy, and terminated towards the mouth of the uterus by a somewhat elevated margin, which may be described as composed of striæ. Air could be injected from the right Fallopian tube into the uterus, but not from that of the left side, nor from the uterus into the cyst already alluded to. The left Fallopian tube was clearly connected with this cyst, although impervious about four lines above it. The cyst has been already sufficiently described.

The left ovary was much shrunk, and a hydatid was observed attached to it. On its outer surface was a recent cicatrix, in which a minute dark clot could be

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\* London and Edin. Monthly Journal Med. Science, April, 1842.

observed. Near this, on section, two corpora lutea could be observed. The ovarian extremity of the left Fallopian tube was very open, and beautifully fimbriated.

The right ovary displayed two corpora lutea, and several Graafian vesicles.

*Remarks.*—Notwithstanding that the embryo was not found in this case, being probably contained in the huge clot, there can scarcely be a doubt entertained of the nature of the case; and this being granted, the chief remarkable circumstance with regard to it is, the *early period* of gestation at which rupture of the sac took place.

In general, rupture of the sac in case of tubarian pregnancy takes place towards the third month. From the size of the sac in the present case, and the absence of marked symptoms of pregnancy, together with the recent formation of the decidua and state of the uterus, Dr. Glover would be inclined to consider the pregnancy as not more advanced than three weeks. It is by no means improbable that parallel cases are more frequent than is supposed.

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#### CASE IN WHICH AN AORTIC ANEURYSM BURST INTO THE BRONCHUS.\*

On the 8th of February last, Mr. James Goss, second master of H. M. S. *Impregnable*, then lying in Malta Harbour, struck a man named Edward Purvis on the face. Purvis stooped down, picked up his cap, appeared much excited by the blow, ran up the main ladder, and then again on the upper deck, where he rushed suddenly to a water-bucket and began to drink; immediately afterwards he ejected an immense quantity of blood from the mouth. In five minutes more he was dead, probably about seven minutes from the time the blow was inflicted. Dr. Martin, deputy-inspector, with the surgeons of some of the ships in harbour, were ordered to form a board of inquiry upon the cause of the man's death. The following is the substance of the report of the surgeons, drawn up after the post-mortem examination.

There were no external marks of injury on the body; there was a considerable quantity of frothy mucous tinged with blood exuding from the mouth and nostrils; the external veins were very turgid.

The left lung was greatly engorged with blood, and on removing it from the body, the whole of its substance, together with the air-passages, was found filled with blood. There was some blood extravasated on the right side, but not to the same extent.

There was an aneurysm of the arch of the aorta where it crosses the windpipe, about the size of a large walnut; the aneurysm had burst into the windpipe.

Absorption of the anterior portions of the bodies of the fourth and fifth vertebrae had taken place. The heart was of the usual size, and apparently healthy. The other viscera also appeared healthy.

On the 17th of February, a court-martial was held on Mr. Goss, when the principal defence of the prisoner was founded on the medical evidence. Dr. M'Arthur declared that "from the appearance of the aneurysmal sac, it must have been on the point of bursting for some time previous to the deceased's death." Dr. Leyson deposed that "the deceased could not, under the circumstances of the disease, have lived any length of time." Dr. Martin stated, that "the blow on the cheek could not have produced the bursting of the aneurysm."

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\* *Provinc. Med. Journ.* April 16, 1842.

Under these circumstances the court declared the charge "proved in part," and condemned the prisoner to be dismissed from Her Majesty's service.

We are not aware of any case on record precisely similar to the above. There can be very little doubt, but that the excitement produced by the blow occasioned the immediate bursting of the aneurysm, and that any violent emotion would have produced the same effect: but still it is difficult to deny that the blow caused the death.

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#### PHARMACY IN GREAT BRITAIN.

The following is a sketch of the regulations about to be adopted by the Pharmaceutical Society, with regard to those who wish in future to become members of that body.

Having decided on becoming a pharmaceutical chemist, the student must first be examined in his classical attainments. If residing in or near London, he must present himself for examination at the house of the society, but if living in the country, a certificate of examination by some properly qualified person will be sufficient. At present the Latin language will form the groundwork of the examination, but it is not improbable that at some future period, French, arithmetic, and other branches of knowledge will be included.

The secretary having received the certificate of qualification, the indentures are to be registered, and the apprentice begins his labours. By paying a guinea annually, he is entitled to enjoy whatever educational advantages a connexion with the society can afford.

In order to assume the grade of an associate, he must pass an examination in pharmacy, and this ought to be done as soon as possible after the expiration of his apprenticeship, and in order to remove any unnecessary obstacles to the early attainment of this rank, a *minor examination* has been instituted expressly for associates. The subjects comprised in this examination, are the Pharmacopœia of the London College of Physicians, prescriptions and practical pharmacy. Having passed this examination, he receives a certificate from the board of examiners, stating that he is competent to act as an assistant to a chemist and druggist, and is eligible as an associate of the Pharmaceutical Society.

When the associate wishes to commence business on his own account, his next step is to obtain the diploma of the Pharmaceutical Society, by passing the *major examination*. This comprises the Pharmacopœia of the London College of Physicians; chemistry, materia medica, botany, and pharmacy, as embodied in the Pharmacopœia: prescriptions, and the antidotes for common poisons. The difference between this examination and the former will consist in the degree of proficiency required on all the subjects, and the addition of the science of chemistry, botany, and the rudiments of toxicology; to those enumerated as applicable to associates.

At first, however, the examinations will be somewhat modified, so as to be adapted to the present condition of the candidates, but will be increased in severity as the progress of education allows them to be so, without inflicting injustice on individuals, or injuring the Society, by making the laws respecting admission too prohibitory.—*Pharmaceut. Journal, August.*

TRAUMATIC TETANUS SUCCESSFULLY TREATED BY THE SESQUICARBONATE OF IRON. By GEORGE WOOLLAM, M.D.\*

W. B. æt. 44, a farmer, muscular, and of rather irregular habits, in returning from market on March 29, 1840, fell, when a cart-wheel passed over his right hand. On the same evening he was seen by Dr. Woollam, who found the thumb much contused and lacerated. The case went on very favourably until the 17th of April, when Dr. Woollam, on visiting the patient, found him lying on his left side, in a state of complete emprostotones, unable to turn or even to move himself without assistance; deglutition was accomplished with extreme difficulty; the jaws were capable of being separated to such an extent only as to admit of the introduction of a shallow spoon into the mouth. The pulse was 105; pain in the epigastric region; a haggard appearance of countenance; a fixed prominent eye, with occasional profuse perspiration. On examining the wound it was found to be covered with adhesive plaster, and in a very unfavourable condition; a bread poultice was applied to the thumb, and six grains of calomel were given immediately, and in a few hours after two ounces of castor oil.

Eight in the evening; no alleviation of the symptoms, though the bowels have been freely relieved;—sesquicarbonate of iron, two drachms, to be taken every hour.

April 18, nine, A. M.—No alleviation. The iron to be continued in increased doses. Eight, P. M.: throat feels easier; no evacuation from the bowels since yesterday evening. The castor oil to be repeated as formerly.

April 19, ten, A. M.—Can swallow better; speaks more distinctly; can turn himself in bed, and, when raised, can sit up, though in a bent position. The iron was continued, being exhibited now to the extent of two ounces in two hours, and persevered in till the 27th, when the patient was so far recovered as to be able to walk abroad. From this period the dose was gradually diminished, and, on the 11th of May, entirely discontinued, the disease having completely subsided.

In support of the utility of iron in neuralgic affections, it may be interesting to add, that a few weeks since, Dr. Shearman, of Rotherham, exhibited it with the most perfect success in a very formidable case of tetanic disease, which had supervened a fortnight previously to his having been called.

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TREATMENT OF ENCYSTED TUMOURS BY CREOSOTE.†

Mr. Robinson, of Chapel Street, Grosvenor Square, treats small encysted tumours in this way:—

“Make an incision into the tumour, and discharge its contents; then cleanse out the cyst by means of lint and warm water, and, when thoroughly cleansed, fill the cyst with lint soaked in creosote, which must be removed daily at least, thoroughly cleansing the cyst each day, and inserting fresh lint soaked in creosote. Continuing this treatment for about a week you will be able, by a pair of dissecting forceps, to remove a part of the cyst, placing the patient in a good light, so that you may be able to see into the cyst when it is dilated. It will most likely happen that the whole of the cyst cannot be removed at once: then the same treatment of cleansing and inserting lint dipped in creosote—

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\* Prov. Med. Journ. April 30.

† Med. Gaz. Sept. 2, 1842.

note must be observed till the whole of the cyst has been removed; and when this has been accomplished, the part will collapse, and scarcely leave any mark."

It is well to be aware that such a method may be practised, although we confess that, in the great majority of cases, we would prefer excision of the cyst. *That* is speedy and effectual, and, taking every thing into the account, perhaps as little painful as Mr. Robinson's more tedious plan. If the cyst is not to be removed by the knife, we should conceive that puncturing it and introducing the nitrate of silver would be more effectual than the creosote. But we have never seen the latter used, and it is not, therefore, fair to pronounce upon it. Our readers may be induced to give a trial to it, where the patient has a horror of the knife.

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#### FREE TRADE IN EDUCATION AND QUACKERY.

The *Lancet* has some observations upon quackery, which appear to us to be just. But we confess that we do not go the whole way with our contemporary in his free-trade views, nor do we think that science is quite in the same category with hardwares or provisions. The ordinary principles which regulate commerce and barter are either inapplicable to the arts, or demand a considerable modification when they are applied to them.

The *Lancet* is a free-trader in one direction, but no free-trader in another. In the acquisition of knowledge, it is a free-trader—in its application, a sort of monopolist. It says—"What signifies it where a man gets his knowledge, so that he has his knowledge? but having got that knowledge, and his *degree*, he must be protected."

In accordance with its first position, the *Lancet* denounces certificates and all that sort of thing. As a corollary of its second, it wars upon quacks.

We are not quite sure that free-trade views are so applicable to *education* as the *Lancet* supposes.

In the first place, it is by no means very easy to determine, by an examination, what a man does know of a practical art like medicine. He may be at home in question and-answer work, and, at an examination table, may cut a better figure than one who has really seen more and can do more at the bedside. Every body knows the perfection to which the grinding system has been brought, but there are few, we presume, who argue that gentlemen who acquire their whole professional knowledge in that way, are the best qualified for practice. Any additional guarantee, then, for a really sound education cannot be undesirable. Such a guarantee can only be found in a properly prescribed course of study, the recognition of duly constituted schools.

But this is not the only point of view from which to regard this question. A medical school requires a considerable outlay of capital. To build and keep up dissecting-rooms, stock and maintain a museum, and supply pupils with those conveniences and comforts which are requisite not only for their physical but for their moral health, and last, not least, to induce men of talent and experience to devote their time to teaching, there must be something like a profitable return. It is not to be supposed that men will long work for a barren reputation, or, at all events, that having got what is to be got in that way, they will continue to labour at a loss. The lecturers on the practical parts of medicine ought to be men in practice. Are *they* likely to submit to the sag and worry of lecturing without pecuniary remuneration? We apprehend not. Now the free-trade principle applied to schools tends to their indefinite multiplication, nay, to their deterioration. Pupils are practical free-traders too, and they are prone to

go where they are *promised* most for the least money. *Grinders* have great charms in their eyes, and, were it left to their own option, to grinders, the bulk of them would hie, and with grinders they would be content. Will any man at all acquainted with medicine contend that this would be a healthy state of things? Will any one maintain that the object of legislation should be to encourage this? We fancy not. Yet undoubtedly the effect of throwing open the school market would be to multiply schools and *grinders*, and in the same ratio to discourage the application of capital, whether monetary or intellectual, on a large scale to teaching.

The celebrated schools upon the Continent which the *Lancet* so often triumphantly refers to, are not constructed on the free-trade principle. They are found in universities or hospitals, supported by those restrictions and monopolies so odious at home. Nay, it is by virtue of these very monopolies that we get in the German universities a class of teachers comprehending such men as Blumenbach, Meckel, Müller, &c., that cannot be reared in the rough atmosphere of our more *liberal* institutions. Should liberalism take them for its own altogether, hardy plants of the *grinder* sort, would soon be the only ones to flourish.

The majority of the profession, the great mass of general practitioners, are more directly interested in this matter than they may imagine. They are confessedly struggling with difficulties, badly paid and insufficiently employed. Ask any medical man what he thinks the real evil—ten to one he replies—"the profession is over-stocked." It is almost ludicrous to see in any populous neighbourhood the blue bottles, coloured lamps, and other *affiches* of the faculty. If a new street is built, the first tenant is sure to be a baker, and the next a doctor. Indeed, the latter is often seen, with a courage worthy of a better cause, to emigrate to regions as yet untenanted, and form a sort of pioneer of civilization, to streets and crescents still unborn. The uneasiness and pressure in our ranks is too palpable to be denied. Is such a state of things to be met by measures which would tend to crowd the profession still more? Is a fresh premium, or additional facilities to be offered to men to join us? If the expense of a medical education is at present insufficient to keep down our numbers to a standard consistent with the comforts of the mass, is that education to be made less expensive still? Yet it is of the *expense* of medical education that the *Lancet* continually complains—the *expense* is what it would diminish. Suppose the economical views of the *Lancet* acted on. Additional numbers of a lower class, with a lower standard of comfort and respectability, would soon crowd in upon us. Competition would, of course, increase—with that competition the present rate of profits, small as it is, could not be kept up—necessity would drive men to shabby and dishonourable acts—and the result must be to steep the profession in poverty, cover it with discredit, and debase its position in society. The class on which this would principally tell, would be the general practitioner. The aristocracy would always command, and always repay the services of a few physicians and surgeons whose remuneration and place in public estimation would contrast the more strongly with the degradation to which the bulk of the profession would be sunk. In short, we cannot conceive a more injurious or more lamentable state of things than throwing down the barriers which now prevent a rush into our ranks, would give rise to.

One word more, and we have done. The uninitiated might suppose from the denunciations of the *Lancet*, that the Lecturers, as a class, were fat monopolists, gorged with fees, and accumulating fortunes. To those who know the facts, this is positively laughable. Such are the expenses, that some get nothing, many get next to nothing, most get very little, and very few receive what can be considered an ample recompense. As for the *bulk* of the Lecturers, one has only to look at them to laugh at the idea of *their* being rich. Lean, hungry

looking chaps, with high cheek-bones, white complexions, and somewhat rusty coats, they contrast strongly with Mr. Wakeley himself, whose coronership, if we may judge from his jolly face, ample waistband, and whole turn out, is worth all the lectureships in London put together.

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#### CITRATE AND AMMONIO-CITRATE OF IRON.

The citrate of iron has lately been introduced, and is much recommended as a tonic. It is important, however, to observe, that there are two salts similar in appearance, which are occasionally sold indiscriminately as citrate of iron.

The true citrate is very sparingly soluble, and is adapted for pills or powders. The *ammonio-citrate* dissolves with facility, and is a more elegant preparation, when taken in the form of a mixture.

The addition of a few drops of liquor ammoniæ to the citrate, confers solubility on it, by converting it into the ammonio-citrate.—*Pharmaceutical Journal*, April 1.

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#### ARTIFICIAL HARROWGATE WATER.

According to Mr. John Mackey, the following is a good substitute for the genuine Harrowgate water:—

℞. Sulphatis potassæ cum sulphure ..	3 j.
Potassæ bitartratis .. .. .	3 ss.
Magnesiæ sulphatis .. .. .	3 vj.
Aquæ distillatæ .. .. .	℥ij.

Solve. Capiat dimidium pro re natâ.

The above is sufficient for a quart, and ought to be taken early in the morning before breakfast, and be followed by a walk, to produce the desired effect.

The artificial Harrowgate salts are very much employed, and not unfrequently by those who drink the genuine water, for the purpose of increasing its aperient power.

The salts may be made as follows:—

#### HARROWGATE SALTS.

℞. Sulph. potass. cum sulphure .. ..	3 vj.
Potassæ bitartratis .. .. .	℥j.
Pulv. magnes. sulph. .. .. .	℥vj.

Misce bene.

The usual dose of the above, is one tea-spoonful in a small tumbler-full of tepid water, early in the morning.—*Pharmaceutical Journal*, No. VII.

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☞ *This is a very useful Vade Mecum for the Auscultator.*

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☞ *Out of 100 operations 65 were "perfect or satisfactory"—9 satisfactory, but without late report—7 improved, but requiring operation on the other eye—4 not improved, but requiring &c.—5 improved, but unfavourable cases—5 much improved 3 slightly improved—2 no improvement.*

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## TO CORRESPONDENTS, &c.

### CHOLERA IN CALCUTTA.

"It sometime in March took quite a new character—those attacked had not the usual purging and vomiting, but it come on with a sort of *faint sinking*, the strength was, without outward effort or apparent cause, totally prostrated, and the patient died without suffering, as if labouring under the effect of poison."

The above is from a gentleman of the Civil Service, dated May 10th, and is remarkably characteristic of the pathological views given at page 348, Johnson on Tropical Climates. wherein it is stated that the impression of the morbid cause would appear to be made principally and originally on the organic system of nerves.

J. R. MARTIN.

### MIND OR MATTER.

ERRATUM—By a mistake of the Reviewer, at pages 602-3, the name of ELLIOTSON was substituted for ENGLEDEW, in the Address to the Phrenological Society. The Chairman was Dr. ELLIOTSON, but the Orator was Dr. ENGLEDEW.

**EXTRA-LIMITES.**

*[To the following representations are due the recent improvements, ordered by Government, in the pensions, promotion, and discipline of the Medical Department of the Indian Army.]*

**NOTE ON THE PRESENT CONDITION OF THE MEDICAL DEPARTMENT OF THE INDIAN ARMY.** By *J. R. Martin, Esq.*, Surgeon on the Bengal Establishment.

In what is here submitted to Authority on the subject of the Medical Department of India, I shall beg leave first, to offer a few observations of a general nature ;—secondly, to state the results of the present mode of managing the affairs of the Services through boards composed of three senior officers on the list, and who, in Bengal at least, rise by this right only, to be the executive heads over 350 officers ;—and thirdly, I shall state the actual condition of the body of the Service intrinsically, and as compared to the army to which it belongs, as well as to the corresponding department of Her Majesty's Army.

1. One of the first general disadvantages of the Medical Department, as compared to the other services, is, that neither at home nor abroad is the interest of the Service represented in the councils of the State. In this respect it remains just what it was sixty or seventy years ago, although the general importance of the department and the qualifications of its members have increased enormously :—it is in the scale of remuneration alone that a great decrease has taken place. The Medical Service of India claims the consideration of Authority, on the score of its skill, labour, and activity, which have never been confined to mere recognition of professional duty, but extended to the developing the resources of the Empire at large, and to the moral improvement of its vast population. In these respects no class of the Company's servants has a higher claim to the consideration of the ruling power.

2. During the last sixty years the formation, discipline, and economy of the Indian Army have been variously and advantageously modelled upon those improvements, the results of experience, which have been adopted in the Royal Service ; whereas the Indian Medical Department, an intrinsic part of the Army, has, by a strange oversight, been left just where that of Her Majesty's Service was in 1780 :—in other words, it has remained stationary during these sixty years ; and up to this hour it is deemed to have no claim to any other mark of distinction than is included in the mere routine of promotion by seniority :—in fact, the stagnation of this anomalous principle weighs upon it with peculiar and deadening effect—especially in Bengal, where promotion is so far more slow than at the other presidencies. The great body of the Service—debarred the legitimate expectation and hope of rise or distinction, beyond such as belongs to a name borne so many years on the muster-roll—rather than to a character for knowledge, activity, and discernment—droops and stagnates—so as, after a time, to lose that salutary zeal which prompts to those exertions that, in all other services, secure a just and honourable reward.

3. Disadvantages press on every grade of the Service : they comprise—exclusion from the honours and privileges attached to military advancement, though medical officers be equally exposed with their military brethren to the most pressing dangers of Indian Service, as evidenced by the numbers that fell in the Burmese and Afghan campaigns, as well as in the earlier campaigns of Lord Cornwallis—a low military rank—a too low rate of retiring pension, as well as

the want of a greater number of grades; in short the entire Service demands a remodelling, to keep pace with the general improvement of the Indian Army, and to assimilate it to the medical service of Her Majesty's Army.

4. Many of the evils of the administration of affairs in general, in India, are traceable to a disposition to multiply checks so as in reality to cumber the executive machinery, thus casting the responsibility, not upon qualified individuals, but upon boards. In the medical department a board, instituted for the transaction of public business, consists, like the former board of the British army, of "three persons of equal power and authority; and as it rarely happens that three men think exactly alike in every thing, so counterpoises existing, counter-action arises, movement is jostled, embarrassed—and effect is feeble or erroneous"—in fact, a board so constituted presents us with the very symbol of *vis inertiae*.

Judging by an extensive observation of more than twenty years, I should say, that of all the modes of perplexing simplicity of operation, of weakening energy, of nullifying unity of purpose, of clogging public business, and of evading substantial responsibility, a board is the most direct mode; but especially a board constituted on the seniority principle.

5. In Bengal, the members of the board have, on an average, completed a period of forty years' service. They are necessarily superannuated, generally deficient in military experience, and therefore cannot be expected to represent the feelings or the interests of the body of which the board is the nominal head. As members of a scientific corps, likewise, they represent an age gone by. Nor does the board possess the confidence of the Service, or of the Government, for power and patronage are taken away from it; thus leading to the conclusion that the Government of India does not consider the board to possess those claims founded on distinguished services and talents, large acquisitions, liberal and generous views, conjoined to official tact, which ought to characterise the heads of a great department.

6. With reference to this part of the subject, a document lies before me, entitled to great consideration, as the testimony of a gentleman of distinguished talent and rank in the Civil Service; I mean Mr. R. D. Mangles at present M.P. for Guildford, who, in his minute as member of a committee appointed by Lord Auckland, after declaring his opinion that no means short of a complete re-organization of the whole economy of the Bengal Medical Service can ensure efficiency, observes as follows:—

"It is impossible not to remark, in the first place, the utter want of professional stimulus to those exertions by which the other branches of the public service, the individual and the state are alike benefitted. The existence of valuable prizes, which are happily, in many instances, awarded to merit, calls out from the ranks of the civil service the individuals from whom the local government or the authorities in England, no less for their own credit than in justice to desert, select their highest and most distinguished functionaries; and many, doubtless are quickened to highly useful efforts after distinction by aspirations for rewards which they never attain.

"Moreover, the recompense of success, almost always consists in the elevation of the meritorious individual to a sphere of more arduous labour and of greater responsibility in his own particular walk of the service, and invariably within its general pale, with the attendant benefits of enhanced consideration and emolument. A corresponding state of things exists, though with some exceptions and in a qualified degree, in the Military Service; and those most competent to form an opinion on the subject have always deeply regretted the points of difference, especially the want of a sufficient number of strictly professional prizes—a want which—as an apt example, compelled the Government of the day to reward the officer who so greatly distinguished himself at Seetabuldee, with a paymastership."

"But in the Medical Department there are scarcely any professional prizes proposed to merit.

"Under such a system, where every situation of pecuniary value is given upon a sort of tontine principle, as a bonus on longevity, and where, consequently, such situations are unattainable, out of turn, by the highest merit, and confer no distinction when attained; how is it possible that emulation, the mainspring of all useful and honourable exertion, should exist? How, again, is it possible," continues Mr. Mangles, "that the three senior surgeons on the list should always be properly qualified to instruct, direct, and control the whole body of subordinate officers; how the ten following names should always represent that number of efficient superintending surgeons? How would the affairs of the Revenue Department to take an example out of many, be administered, if the board were invariably composed of the three senior members of the service, and the ten next on the list had a claim of right to the commissioners?" To Mr. Mangles' able and apt illustration, nothing need be added; for by the seniority system, no one can be said to rise.—it is indeed, on the contrary, a steady progress downward in all that constitutes professional character. I leave this part of the subject then, only calling attention to it on the score of its high importance, and proceed to notice briefly the condition of the service at large.

7. The Medical Service of Bengal consists of 350 officers. The proper training of such an extensive department to the efficient purposes of the army, requires a careful and systematic organization; for without that, and a competent individual at the head of the department, (or more properly speaking, as its responsible head), no talent or skill of the members of the general body, acting on no common system, and stimulated by no steadily succeeding vivifying motives, can avail for the public good. As it is now, a languid or cold indifference takes place of the better feelings that lie dormant in the Service.

8. The great improvement in the medical department of the British Army, and consequent amelioration of the soldier's health date from the modification of it by substituting a director-general for a decayed board; and a regular gradation of officers of high rank and advanced allowances promoted from the more effective of the regimental surgeons. It is to this systematic arrangement under an efficient head, together with the honours, distinctions, and rewards distributed to talented and meritorious staff officers, that the present pre-eminent efficiency of the Medical Department of Her Majesty's Army is due. The Medical Department of the Indian Army should, without loss of time, be formed on the same model as that of Her Majesty's Service, only granting a higher rate of Indian pay and retiring pension to such regimental surgeons as should be found ineligible for staff employ after an actual service of twenty-five years. Such a measure would become necessary as a means of inducing persons to retire from active duty, and make way for more able successors. No arrangement that does not comprise a complete re-organization of the Indian Medical Department, can lead to or secure its real efficiency.

9. It arises from the general defects in our medical administrations, and consequent want of emulation in the Service at large, that no one instance of honorary distinction or reward of any kind is to be found in a list of 350 medical officers, while it is notorious that there have always been numbers distinguished for professional merit, and many more who have shared the worst dangers and hardships incident to active Indian military service. The condition in this respect, of the Bengal Medical Staff, is most humiliating, and will of itself go far to account for the otherwise inexplicable fact to so very few, comparatively, out of so large a number, having risen to public distinction:—the talent is ample, but the prize for exertion has never been held forth.

10. There are now in the Bengal Army 112 officers promoted by Her Majesty's Brevet, and 49 officers of various grades on whom different orders and honorary distinctions have been bestowed, while the number on whom staff-offices have

been conferred is scarcely to be reckoned. The difference here pointed out will appear more remarkable when it is considered, that the training of the military surgeon is effected in much the same manner as that of any other military officer; that is, after receiving a good general and professional education, he must serve with the troops in the field and cantonments, so as to acquire that practical experience, without which the best instructions of schools, or of civil practice, will yet leave him comparatively useless. It is notorious besides, that the sufferings of the Medical Staff, from the exposures and hardships incident to service in the field, even exceed those of the infantry.

11. Every officer of the Indian army, excepting those of the Medical Department, has it in his power to retire after certain periods of service on a pension equal to the full pay of officers of similar grade and rank in the royal army. Surgeons alone form the exceptions to the rule; for they are limited, whether they have served 20 or 32 years, to a pension of 10s. 6d. a day, while, as is shown by the subjoined Table, the Surgeon in the Royal Army enjoys a graduated scale of retirement varying from a minimum of 10s. a day, after 20 years' service, to a maximum of 17s. a day after 30 years' service, with the prospect of a still higher rate, if fortunate enough to attain the rank of Inspector or Deputy-Inspector of Hospitals. It thus appears, that the Indian Medical Establishments do not enjoy the improvements in pay and constitution of their department, in all its parts, that have been from time to time adopted in the Royal Army, upon which the Indian Army is modelled: they remain in point of rank and pension just what that of the Royal Army was prior to 1780. This is believed to be a pure oversight, as it never could have been intended by the Honourable the Court of Directors, the constitution of whose Military Establishments has uniformly been based on a perfect equality in rank and pension with the Royal Army, to leave so large and meritorious a department as the Medical Service of India, consisting of 720 officers, in so disadvantageous a position in this respect. Nor does the medical service of India bear any approach to that of the royal army in the number or importance of its staff offices; and great numbers in the Royal Medical Service are distinguished by British and Foreign honorary orders, whilst out of the Indian Medical Staff, consisting of 720 officers, not one instance of any such distinction is to be found. These facts are the more surprising when the very severe nature of Indian Military Service,\* and the merits of the Medical Staff are considered.

12. There are only four medical grades in the Company's Service, viz. the assistant surgeon ranking with a lieutenant, the surgeon with a captain, the superintending surgeon with a lieutenant-colonel, and the member of the medical board with a colonel. We have no grade equivalent to that of major, which has been for many years a subject of complaint from its manifest injustice in a variety of ways, but hitherto the memorials on the subject have pro-

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\* As an example of the comparative severity of Indian service; the writer of this report begs to state that he served in the two campaigns in Ava, in the first year of which alone  $3\frac{1}{2}$  per cent. were killed in action, and 45 per cent. perished by disease—making a total loss of  $48\frac{1}{2}$  per cent.; whereas, taking a period of 41 months, during which the Peninsular War was prosecuted with the utmost vigour, 4 per cent. were killed in action, and 12 per cent. died of disease — “consequently each person employed throughout that year encountered more risk of life than in three Peninsular campaigns.” In the second year of the war the proportion of deaths in action and by disease was “about one-half of what occurred in the first”—making the total loss, during the two campaigns, about  $72\frac{1}{2}$  per cent. of the European force engaged.—*Major Tulloch's Statistical Reports, printed by order of Parliament.*

duced no effect. The following are the grades in Her Majesty's Army, with the rates of pay attached :

	After 20 yrs. Service.	After 25 yrs. Service.	After 30 yrs. Service.
Director General .. .. .	per annum. £ 2000.		
Inspector General of Hospitals ..	per day. 20s.	per day. 25s.	per day. 30s.
Deputy Inspect. Gen. of Hospitals..	14s.	17s.	20s.
Staff Surgeon, 1st Class. . . .	12s. 6d.	15s.	17s.
Staff Surgeon, 2nd Class .. . .	11s.	13s.	15s.
Regimental Surgeon .. . . .	11s.	13s.	15s.
Assistant Surgeon .. . . .	6s.	7s.	7s. 6d.

N. B. By the pension-rules of Her Majesty's Service, 20 years passed in the East Indies are equivalent to 30 passed in the other British dominions.

In the present condition of the Indian Medical department—deprived of grades and honours—an officer, when he has attained the rank of surgeon, may consider that for the next twenty years he has nothing further to hope, and that promotion will reach him only with superannuation. This state of hopelessness causes many to retire from the service at a time of life when they are most useful to the State.

13. On attaining the long-envied rank of superintending surgeon again, the incumbent must serve two years before he can lay claim to the pension of his rank ; whereas the military officer has only to be Gazetted to possess his right of pension for life, from the date of such Gazetting. This is considered a particular hardship in the medical service, and with justice it is believed, when we see that at present the ten senior surgeons on the Bengal list are of 30 years' service, or upwards, who, according to existing rules, are entitled to no higher rank or pension than that of captain, viz : £ 191. per annum. In the Royal Army the rate of pay progresses according to the date of standing in the Service.

"All English labour in India," it has been well observed, "from the labour of the Governor-General and Commander-in-Chief, down to that of a groom or watch-maker, must be paid for at a higher rate than at home. No man will be banished, and banished to the torrid zone, for nothing." This rule seems admitted in respect to both the pay and pension of all public functionaries in India, with exception only of the Medical Department of the Army.

14. Let the following facts speak for themselves :—a captain retires on completing 24 years' actual service in India, on major's pension, or £ 292 ;—a captain of 28 years service, on lieutenant-colonel's pension, or £ 365 ;—a captain of 32 years' service, on colonel's pension, or £ 456 ;—while a surgeon of 24, 28, and 32 years, has yet but a pension of £ 190, for service solely in a tropical climate ; and we have now, in Bengal, surgeons of 33 years' standing, unpromoted. Again :—one third of the colonels of the army have regiments, affording a competency for life ; and of 191 lieutenant-colonels and majors, one in two is in receipt of extra-regimental allowance for the command of corps. Of the field officers besides, 56, or one in five, hold staff situations with handsome salaries ; and of the captains, 159, or one in three, hold similar advantages, while 389 lieutenants, or one in 2½, hold staff offices. In addition to all



these advantages, the officers of the army have the privilege of purchasing out seniors to an unlimited extent. Now, of 106 surgeons in Bengal, only ten hold staff appointments with the allowances above regimental surgeons; and of 244 assistant-surgeons, 14, or one in 18 only, have the same advantage, while in the army of the same presidency, one officer in six holds field rank, and only one surgeon in twenty-six stands in corresponding position. The comparative disadvantages under which we labour, are as numerous as they are impolitic in themselves, and humiliating to our service.

15. It is important here to notice the economic fact that, with the double advantage for retiring possessed by the army, the home pension list has not increased of late years. It is clear, therefore, that the granting of similar advantages to the medical department would not entail any additional cost: on the contrary, by removing the superannuated, who draw the larger salaries in India, the efficiency of the service would be promoted, and that without adding to the home expenses of the Government.

16. If, as here taken for an undisputed fact, the principal object of the Government is, and ought to be, the formation and maintenance of an efficient Medical Staff for the army; then the existence of the various civil abuses already pointed out, and the employment of so large a portion of the service for an indefinite term of years in civil stations, are most injurious. The engrossing commercial habits acquired at civil stations, and not unfrequently, the habits of professional inaction, induced by want of practice, tend greatly to disqualify such as have passed a number of years in such a situation for a return to their proper duties with the army. This most injurious course should instantly be put a stop to, and no surgeon or assistant-surgeon ought to be permitted to remain longer than three years in civil employment of any kind, except at large city stations, where there are hospitals; and such as must of necessity be so employed should be encouraged to practice amongst the people, and to study the medical topography of the districts in which they serve, so as to keep their minds in professional exercise. The much abused custom now prevalent, of permitting medical officers to resign promotion, holding for life civil and military staff offices of responsibility, ought also at once to be abolished, as being injurious to the character and best interests of the service.

17. Promotion to offices of trust should no longer be granted on the seniority principle. To demonstrate the truth of this cannot be necessary, after what has been already stated; but I may as well mention that, in Bengal, an individual of little worth, whether regarded as a medical officer or a gentleman, may now look upon it as certain that, provided he survive his contemporaries, he shall rise in due time, not only to the superior staff employs, but to the governing head of the service; and thus have risen within the writer's recollection, not once, but frequently, the mere merchant, the confirmed gambler, and the exhausted tippler. It is true that in our motley and vague code of regulations the principle of selection is paraded forth; but in effect it has remained a dead letter—a mere mockery.

The depressing influence of such a system, is not to be told; and it ought to be henceforth a rule of the Service that no officer but one of the highest character, moral and professional, should ever rise to such offices; and experience, with approved service with the troops, both in the field and in cantonment, ought to be a qualification in no instance to be dispensed with.

To conclude: As respects the existing state of the Bengal Medical Service, I think it has been amply made out, that with reference to its directing head, the Staff immediately subordinate to that head, and the general distribution of the members at large, a more defective department exists not in any army. Under such a system of misapplication of means to an important end, the talents, the emulation, the aspiring feelings, no less than the experience even

of the Service, are paralysed, and will continue to be so, until a more healthy and vigorous plan of supervision and general organization be established.

J. R. MARTIN.

*London, June 10, 1840.*

### TO RECAPITULATE.

1st.—That pension, according to length of service, be extended to the Medical Service of India, the same as granted to the officers of the Indian army, and as accorded by the British Government to the medical branch of the royal army; also, that the superior medical officers be entitled to their pensions from the date of their respective commissions, in common with the military officers in India, and with the medical officers of Her Majesty's service.

2nd.—That honours and rewards, proportionate to its services and experience in actual war, be awarded to the Indian Medical Department, and such as are granted to the medical branch of the royal army.

3rd.—That grades similar to those of the royal service, be established in the Medical Department of India, and that the Governments be no longer limited in their selection for responsible staff and other medical offices to mere seniority; but that, after the prescribed period of seventeen years' service, all officers of character, and who may have served with credit with troops in the field, be eligible to the higher staff and other employments; professional character and military experience in actual service, being indispensable.

4th.—That no medical officer, of whatever rank, be allowed to continue longer than three years at a civil station, or in civil employment of any kind, with the exception of large cities, as already mentioned.

5th.—That the very injurious custom, hitherto prevalent, of permitting officers to resign the active branch of the service, still holding for life staff and other responsible offices, be discontinued; and that, for the future, all such as desire to abandon the active duties of the profession be struck off the effective list, and transferred to the Invalid Establishment.

J. R. M.

### ADDITIONAL NOTE.

1st.—Though the system of promotion by absolute rule of seniority, as it now holds in India, is without a defender either here or there, so far as I know; yet, as some few persons whose opinions I hold in respect, apprehend improper super-session, favouritism, and certain supposed abuses of patronage from the introduction of the plan proposed by me, I think it due to these opinions to state my reasons for non-concurrence in them.

2nd.—To combat the apprehensions here stated, I shall adduce facts, an extended experience, and comparison—all referring directly to the condition past and present of the Medical department of Her Majesty's Service; but before doing so, I would here observe, once for all, on the strangeness of the notion that three men, each having his friends and favourites to advance, and being screened from all responsibility by their very plurality, should be less prone to this apprehended abuse of patronage than one responsible head, "openly and solely responsible"\*—having the eyes of the profession and of the public fixed upon him—a supposition opposed alike to principle and to actual experience.

3rd.—Unhappily for the interests of the Royal Medical Service, its affairs

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\* In utter hopelessness of efficient or responsible service from the then existing Army Medical Board, His Majesty George III. was advised in 1798 to constitute another Board—still another Board!!—consisting of three men, a

were for a long time administered by a Board, nearly similar to those now existing in India; and the results were more calamitous in proportion as power and patronage were entrusted to the British Board.

These results were—an utter misapplication of all means tending to the welfare of the army and of the medical department—the horrible institution of the system of general hospitals, destructive of military life—an expenditure so wasteful as to defy belief, were it not for the direct nature of the proofs—a deterioration in the character of the service, inducing every one who could to leave it; all leading to the mismanagement of the soldier's health, and the consequent failure of national enterprises.

These were some of the leading effects, but not all, resulting from the institution of a Board in the Royal Service. They are now matters of history, and I may without another word appeal to the history of the working of the now existing system in Her Majesty's Service in proof, were any wanting, of its vast superiority as regards every object of military welfare for which a medical establishment is instituted.

4th.—I come now more particularly to the apprehended abuse of patronage; and here again I would meet opinion by "facts, an extended experience, and comparison," all furnished to us within the limits of our Indian Empire. For twenty years the affairs of the Medical department of Her Majesty's Army in India have, fortunately for that service, been directed by officers of the Royal Medical Establishment.

I say "fortunately," because they have, without a single exception, been men distinguished for character, talent and experience. Here then we perceive the British Military Authorities and the Director General, neglecting this fairest and richest of their fields for abuse of patronage, in favour of unpretending but real merit; and those who have visited the Colonies of Mauritius, Cape-of-Good-Hope and Australia, have found in them the same honest regard to long and meritorious services. These are well-known facts in the experience of the last twenty years; and I leave to others the melancholy and ungracious task of comparing them to the working of our Indian Boards during the same time.

5th.—In the plan proposed by me, the utmost weight is given to long service when joined to character; in other words, always to select the older when the fitter officer; but as in no walk of public life are all men fit for promotion to the higher departments, the pension according to length of service is claimed for medical officers in common with their military brethren.

6th.—To conclude: Were it as true in nature, as unhappily it is the reverse, that the best men live the longest, still the system of rise by the muster-roll would be the very worst: repressive of all emulation in youth and manhood, and deferring promotion till the verge of life, it leaves for the discharge of public duty no energy, moral or physical, in the possessors of high office.

Such would be the law of nature in any climate; but it holds especially in tropical regions, wherein the course of life is notoriously precocious of old age.

J. R. MARTIN.

*Grosvenor-Street, Grosvenor Square, London,  
October 25th, 1841.*

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Physician-General, Surgeon-General, and Inspector-General, having each "his distinct province of business," and to be held "openly and solely responsible for his own acts." How vain was this last attempt of the British authorities is now matter of history; and every day's experience proves that, however respectable individual members may be, "the moment men meet in public boards they cease to be collectively excellent."—*Vide Fifth Report of the Commissioners of Military Inquiry—Army Medical Department.*

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TO SIR WILLIAM BURNETT, K. C. H., &c. &c.

*Royal Hospital at Haslar, 8th August, 1842.*

SIR,—John Williams, private, Royal Sappers and Miners, aged 26, of great strength and activity, but addicted to habits of intemperance, has been employed during the last two summers on the wreck of the Royal George at Spithead, as a diver, and is considered one of the most expert workmen. On the morning of the 11th ult., clothed in his submarine armour, he was engaged at the bottom of the sea, at a depth of 80 feet from its surface, in fastening an iron chain round a block of wood, that was imbedded in the stiff mud; which task, after an hour's labour, he had just completed, when the flexible tube that supplied him with air suddenly burst above water, with a loud hissing noise, which was distinctly heard at the distance of fifty fathoms.

While the divers are employed in their laborious search under water, the utmost vigilance is exercised by those on the deck of the hulk, to prevent or remedy anything that might endanger the diver's life, or interrupt his operations. The persons, accordingly, who were stationed at the air-tube, and life-line, by which the divers are assisted in their ascent, immediately perceived the accident that had happened, and one of them closed the hole in the tube with his hand. Williams was promptly hauled up, but his armour got entangled in the heavy rope-ladder, by which the divers descend, and he and it were pulled up together, in the space of about a minute and a half, from the occurrence of the accident.

On removing the helmet from his head, blood was seen running in a stream from his ears, nose, and mouth. His face and neck were swollen and discoloured; he looked faint, but was sensible. In this state he was conveyed to the hospital, where he arrived in an hour after the accident. His face then was one mass of lividity; his neck was excessively swollen, bloated, and suffused with livid-coloured blood. Dark patches of ecchymosis that did not coalesce existed over the clavicle and shoulders, with intervening spaces of skin of the natural colour. The lower part of the neck, which had been covered with the flannel and India-rubber dress, was mottled black and white; the dark ecchymosis being raised in lines, with slight streaks of white skin interposed. The livid discoloration of the face extended upwards to, but did not pervade the hairy scalp, where it terminated abruptly; nor were any spots seen below that part of the chest which was covered by the helmet. The lining membrane of the cheeks, under the tongue, over the fauces and pharynx, as far as the eye could reach, but especially over the tonsils, was black with ecchymosis. The conjunctivæ where they are uncovered by the eyelids, and particularly round the margin of the corneæ, were turgid with black blood. He vomited some blood before he reached the hospital, and he afterwards made occasional efforts to vomit, apparently from the accumulation of blood in the fauces, which blood he now and then expectorated. The hæmorrhage had ceased from the nose and ears, which were still covered with clotted blood. He was perfectly sensible, but seemed drowsy; pulse 76, of natural strength; breathing interrupted by frequent, deep, involuntary sighs.

Lieut. Hutchinson, who was present when the accident happened, and who accompanied Williams to the hospital, said that the swelling of the face and neck had much increased, and the lividity had much deepened, during the hour that had elapsed since he left the hulk.

In the course of the same day, the lividity of the nose and point of the chin vanished, and those parts resumed their natural colour. The colour of the face too became much paler, in proportion as the vessels recovered their freedom and

diameter ; but there were large patches of extravasated blood in the eyes, mouth, face, and neck, which could only be removed by the tedious process of absorption. On his admission, warmth was applied to his extremities ; some warm tea was given him, which he swallowed with the greatest difficulty ; he had a turpentine enema ; and in the course of the day twenty ounces of blood were taken from the arm. The following morning a senna draught was prescribed, which has been occasionally given since. He has complained of occasional headache and dimness of sight, from which he is now free. The swelling and ecchymosis of the face and neck have daily diminished ; and these parts have now attained their natural size and colour, showing that they were swollen, on his admission, to twice their natural size. The ecchymoses under the conjunctivæ were very tardily absorbed, and minute clots were visible for three weeks around the union of the cornea and sclerotic coat.

A similar accident occurred, under the same circumstances, about twelve months ago, to Private Roderick Cameron, of the same corps, whose head, neck, and eyes were discoloured in the same way ; an account of which has been read to the British Association by Dr. Richardson. When Cameron was hauled up on the hulk's deck, he had lost all consciousness, and was in a state of apparent asphyxia, from which he soon recovered. A little blood only escaped from his nose ; and none from his ears or mouth. At the expiration of a month, the ecchymoses under the conjunctivæ, that remained the longest, had disappeared ; and undaunted by the perilous accident which had jeopardized his life, he returned to his work as a diver, which occupation he still fearlessly follows. Williams too is undismayed by his frightful accident, and he has resolutely returned to pursue his adventurous life ; feeling confident that the prudent application of those precautions which are now well known, will secure him from danger.

An accident somewhat analogous, as far as I can make out the facts, occurred to a diver at the wreck of H. M. S. Thetis, in South America, who, with a companion had descended in a diving-bell. In this case, also, the air-tube burst, and one of the men immediately extricated himself from the diving-bell, and rose to the surface of the water unhurt. The other man, by some means, got entangled, and was some time in freeing himself from the bell, which he at length accomplished by the aid of his companion, who again descended for the purpose. When he reached the surface of the water, he was much exhausted, and his face and body were blackened with ecchymosis down to the *waist*. This discoloration gradually went off in the course of a month, the blackness of the balls of the eyes being the last to disappear.

These curious and strikingly similar effects of the same kind of accident at Spithead seem to arise from the sudden removal of the compressed air, and the consequent exertion of the pressure of the superincumbent water on those parts of the body which are not covered by the unyielding helmet. It is calculated, in round numbers, that the pressure of the water on Williams' body, at the depth of his submersion, at the time of the accident, was nearly equal to the weight of three atmospheres, which pressure was counteracted, and the equilibrium preserved, by throwing air through a forcing-pump, of great power, along a flexible tube into his helmet. This supply of air is steadily kept up, by constant regulated pumping, during the whole time the diver is under water ; and until the centre lens of the helmet is opened on deck. The quantity of air thrown along the tube into the helmet, far exceeds what is required to sustain easy respiration and the equilibrium of pressure ; but no harm can result from any additional quantity of air that may be forced in ; inasmuch as the superfluous air readily escapes into the sea, by a valve in the helmet, and is seen constantly bubbling up on the surface of the water. When the tube burst, and the air escaped from the helmet, this equilibrium of pressure and resistance was destroyed. The head was protected by the strong helmet, which

did not collapse, from the pressure of the circumambient water, which now acted on the rest of the body with a force equal to two atmospheres, and produced a feeling, as he expressed it, as if he had been crushed to pieces by his dress. The blood thus driven from the extremities and from those parts of the body that were not covered by the helmet, was forced into the vessels of the head and neck (as it is into a part of the skin placed under a cupping-glass) some of which blood remained in the vessels and disappeared in a few hours after the accident; but a large portion was extravasated in the loose textures into which it had been forcibly driven.

Six divers have been employed, during the last three Summers, on the wreck of the *Royal George*. They have now nearly succeeded in clearing it away, and the anchorage has been, in part, restored to its former security, with fewer accidents, and none of them fatal, than it is likely would have occurred in similar operations, during the same space, above water. The value and importance of these operations and the extent to which they may be applied in recovering treasure, or in the destruction of important works on an enemy's coast, are still imperfectly understood, but General Paisley has satisfactorily established that these sub-aqueous operations may be accomplished at any ordinary depth, with ease and safety, by men who are not professed divers, and who have not been trained up from their infancy to the art. The divers engaged at the *Royal George* have been selected from the corps of Royal Sappers and Miners, whose characters and abilities as steady men and good workmen were known to their officers; but only some of those so selected have become good divers, for the effects of protracted submersion are so different in different individuals that it is not every man who can follow the perilous life of a diver. Many experience intense pain in the ears and bleeding at the nose during their descent; and Lieut. Hutchinson, who ably conducts the operations on the *Royal George*, always experiences these sensations, and he has never been able to remain under water for any length of time. Those who are accustomed to dive successfully, never suffer any such inconvenience, and I cannot learn that they experience any very marked uneasy sensation, unless an occasional sense of nausea, or distention at the stomach, headache, and rheumatism; but they all agree that they are much weakened and wasted by the exertion, and as they express it, are not the men they were when they began the occupation. I have not had sufficient experience to determine whether it renders them permanently unhealthy or short-lived.

The diving season commences in May and ends in October, and the divers are usually employed eight or ten hours in the twenty-four. No scene can be more striking, than the activity that pervades the *Hulk* during the immersion of the divers. The busy groups of pumpers, on whose regulated exertions the lives of the divers depend; the deep groanings of the air-pumps; the anxious care that the men stationed over the *hulk's* side, with the air-hose and life-line in their hands, bestow on the preconcerted signals, by which the divers communicate their wants with the precision of speech; the turbulent agitation of active ebullition, that is occasioned by the forced escape of the compressed air through the sea; the dreadful plunge and rapid disappearance of the enormous and unwieldy mass in this boiling cauldron; the eager look of expectation and vague apprehension, with which the spectators gaze on the whole process, exceed in interest any thing I have ever witnessed.

The divers remain under water, according to the nature of their work, from half an hour to three hours; and although, in order to accelerate their descent, they are heavily laden, with ponderous shoes and large leaden weights on their shoulders, constituting a dress of a hundred and thirty pounds weight, they move about nimbly at the bottom of the sea, and feel and work as lightly as if they had nothing on their shoulders and feet.

Mr. Richard Tilston has kindly made a very correct drawing of Williams's appearance when he was brought to the hospital; to which he has added a

faithful picture of him, in his working dress, at the time the accident occurred, in order to convey a notion of his mode of groping his way under water, with his pricker in one hand and dog in the other. In these sub-marine expeditions, the divers frequently encounter each other. On one occasion, three of them, from two different hulks, met, joined hands in a circle, and gave three hearty cheers at this triumph of the art of diving. On other occasions, however, their meetings are less friendly; disputes arise as to their claims to particular logs of wood, quarrels and sparring ensue, in which their large iron prickers play the part of single-sticks.

Nothing can exceed the spirit and industry with which these operations have been conducted, or the laudable emulation displayed by the workmen to excel each other in the quantity of work they severally perform; and nothing has occurred to damp their ardour until lately, when Corporal Jones, one of the most courageous and useful divers met at the foot of his ladder a dead body, which produced such a shock, that he immediately ascended in the greatest possible alarm; and spoke as if he had encountered a supernatural being. Unsuccessful attempts were made to rake the body up from below; but a few nights afterwards it was brought up by Corporal Harris, the most intelligent and persevering of the corps, on his pricker, without his knowing what he had got hold of. His consternation when he reached the surface and found that it was a dead body, was so great, that he could not go down again, and he was replaced by another diver, who not having felt his horror, was not unwilling to descend.

The divers are employed four hours at a time, during the slack tide of low water, and in that space they usually descend about four times. On their ascent after an hour's submersion, they appeared to me, while they were leaning against the hulk's side, to be pale, languid and exhausted, though they did not admit that they were fatigued. When they reach the top of the ladder, the centre lens is unscrewed, their ponderous helmet is taken off, and they are generally allowed ten minutes to recruit, while the wood they may have collected is drawn up by a crane. They can only work two hours at the slack tide of high water in consequence of the strength with which the tide ebbs and flows at that period, which, they say, begins earlier and runs with much more rapidity at the bottom than at the surface of the sea, and which would carry them off their legs. They are also sometimes interrupted by storms, that would prevent their signals from being understood by those who attend the air-pipes and life-lines on the hulk's deck.

The divers are clothed in flannel dresses, that fit closely, which retain the warmth of the body and prevent the chill that might be produced by the soaking of the water through the seams of the India rubber dress. This dress is protected on the outside by a canvass covering, from any injury it might sustain by rubbing against the nails or ragged pieces of the wreck.

We know little of the effects produced by the respiration of compressed air, but the divers find that they can breathe easily at the bottom of the sea; they can sing readily, but cannot whistle. They converse with each other, by shouting at the top of their voice, which they hear in a whisper.

Each diver is paid, besides his regimental day pay of one shilling and three-pence, two shillings a tide, working three tides in the twenty-four hours.

Since the occurrence of Williams's accident, each diver has been furnished with a safety-valve, placed between the end of the air-pipe and the helmet. The air being forced in from the pump, opens the valve, and passes into the dress, but the moment this pressure is removed, the valve closes and prevents any air in the helmet returning through the pipe. This contrivance, however, I fear, in the event of an accident, would only substitute suffocation for that of being squeezed to death.

I have the honor to be, Sir, your most obedient servant,

JOHN LIDDELL.

# INDEX.

<b>A.</b>		Bladder, fungus and polypus of the . . . . .	417
Aberdeen, lunatic asylum of . . . . .	256	Bladder, cancer of the . . . . .	417
Abcess of the uterus . . . . .	222	Bladder, tumours of the . . . . .	418
Abcess of the vagina . . . . .	227	Bladder, hernia of the . . . . .	418
Abcess, venous hæmorrhage from an . . . . .	597	Bladder, catarrh of the . . . . .	429
Abcesses, urinary . . . . .	131	Blind fistule in perineæ . . . . .	440
Abuse of corsets . . . . .	167	Blistering plaister . . . . .	268
Accident to a diver . . . . .	633	Blood, Orfila on the . . . . .	565
Action of plants on carbonic acid . . . . .	163	Bone, King on reparation of . . . . .	461
Adulteration of the milk . . . . .	552	Bougie, introduction of the . . . . .	438
Advantages of early clinical study . . . . .	176	Bougies, use of, in stricture . . . . .	122
Affections of the spermatic cord . . . . .	134	Bouvier on myotomy . . . . .	179
Aimé-Martin on education of mothers . . . . .	113	Brain, Foville on the . . . . .	1
Air, influence of, on the fœtus . . . . .	484	Brain, functions of the . . . . .	26
Allnatt on tic douloureux . . . . .	151	Brain, Lees on hypertrophy of the . . . . .	608
Alopecia . . . . .	397	Bright's disease after scarlatina . . . . .	91
Amaurosis . . . . .	193	British Association, report to the . . . . .	538
Ammonia, generation and influence of . . . . .	162	Brodie on the urinary organs . . . . .	401
Amputation of gangrened limbs . . . . .	174	Bronchial ganglionic phthisis . . . . .	466
Analyses of the Springs of Homburg . . . . .	504	Bronchus, aortic aneurysm in . . . . .	616
Anatomy of the perineum, Monro's . . . . .	157	Broussaism, another blow to . . . . .	165
Aneurysm of the pulmonary artery . . . . .	3	Byron on malignant disease of the eye . . . . .	251
Aneurysm, inguinal, treated by ligature . . . . .	579		
Aneurysm, aortic, burst into bronchus, . . . . .	616	<b>C.</b>	
Aneurysms within the skull . . . . .	577	Calculi of the liver . . . . .	12
Animal substances, component mate- . . . . .		Calculi in Guy's Hospital Museum . . . . .	233
rials of . . . . .	161	Cancer of the cranium . . . . .	598
Animal heat . . . . .	163	Carbonic acid, action of plants on . . . . .	163
Animal chemistry, Liebig's . . . . .	337	Carcinoma uteri . . . . .	225
Another blow to Broussaism . . . . .	165	Carmichael on medical reform . . . . .	153
Antiphlogistic medication . . . . .	106	Cartilaginous disease, case of . . . . .	596
Appendix, lodgment of a pin in the . . . . .	5	Cases and observ. surgical, Syme's . . . . .	587
Arachnitis, diffuse . . . . .	61	Catalepsy . . . . .	557
Armies, purulent ophthalmia of . . . . .	187	Cataract . . . . .	192
Arsenic, oxydes of iron in poisoning by, . . . . .	208	Cataract, Serre on the operation for . . . . .	180
Arteria hæmorrhoidalis inferior . . . . .	160	Catarrh of the bladder . . . . .	429
Arteries, torsion of . . . . .	172	Cauda equina, tumour of the . . . . .	7
Artery of the bulb, irregularity of the . . . . .	159	Caustic, use of, for stricture . . . . .	124
Artery of the prostate . . . . .	160	Ceely on the variolæ vaccinæ . . . . .	13
Artificial pupil, formation of . . . . .	191	Cerebrum and cerebellum, structure . . . . .	28
Artificial inflation . . . . .	216	of the . . . . .	28
Artificial Harrowgate water . . . . .	621	Chelsea, military asylum, report from . . . . .	289
<b>B.</b>		Chemistry, organic, Dumas on . . . . .	161, 534
Babington's case of distended gall- . . . . .	243	Chemistry, Liebig's animal . . . . .	337
bladder . . . . .	243	Chester Infirmary, report from . . . . .	245
Baker's case of cancer of the cranium . . . . .	598	Children's Hospital, clinique of the . . . . .	86
Barlow on disease of the kidney . . . . .	209	Children, pleurisy in . . . . .	93
Becquerel's therapeutics of children . . . . .	104	Children, therapeutics of . . . . .	104
Belfast lunatic asylum . . . . .	333	Children, hæmorrhages in . . . . .	108
Bell on diabetes . . . . .	520	China, medical missionary society in . . . . .	149
Bethlem, admission of pupils to . . . . .	147	China, ophthalmia in . . . . .	149
Bird on urinary concretions . . . . .	232	China, physis in . . . . .	262
Bladder, diseases of the neck of the . . . . .	401	China, state of the faculty in . . . . .	262
Bladder, neuralgia of the neck of the . . . . .	401	Chinese pathology . . . . .	263
Bladder, diseases of the body of the . . . . .	417	Chirayta, infusion of . . . . .	265
		Chusan, description of . . . . .	150



Citrate and ammonio-citrate of iron . . . . .	621	Dumas' theory of digestion . . . . .	164
Civiale on the genito-urinary organs . . . . .	116	Dyspepsia, treatment of . . . . .	499
Civiale on the genito-urinary organs . . . . .	401		
Civilization, progress of . . . . .	37	E.	
Clark's letter on medical reform . . . . .	153	East India command . . . . .	65
Clay on the use of ox-gall . . . . .	278	Eczema of the scalp . . . . .	385
Climate, influence of, on consumption . . . . .	43	Education of mothers, Aimé Martin on . . . . .	113
Climate of the United States . . . . .	135	Education, &c., free trade in . . . . .	619
Climate of Devonshire, Shapter's . . . . .	491	Elements of pathology, Fletcher's . . . . .	371
Clinical study, advantages of . . . . .	176	Encysted tumours of the vagina . . . . .	228
Clinical practice of M. Roux . . . . .	584	Encysted tumours treated by creosote . . . . .	618
Clinique of the Children's Hospital . . . . .	86	Enfans, clinique des hôpitaux des . . . . .	465
Clinique des hôpitaux des enfans . . . . .	465	Epidemic meningitis, history of an . . . . .	541
Cock on injuries of the head . . . . .	229	Epilepsy, Jackson on . . . . .	110
Consciousness, conditions necessary for . . . . .	18	Epilepsy, proximate cause of . . . . .	111
Constitution, influence of, on surgical diseases . . . . .	177	Erichsen on diseases of the scalp . . . . .	379
Consumption, statistics of . . . . .	41	Erysipelas, Nunneley on . . . . .	59
Consumption, influence of localities on . . . . .	41	Erysipelas, treatment of . . . . .	63
Consumption, pathology of . . . . .	46	Exeter, medical topography of . . . . .	8
Consumption, prevention of . . . . .	51	Exeter, diseases of . . . . .	8
Cornea, opacities of the . . . . .	190	Extinction of human races . . . . .	259
Corsets, use and abuse of . . . . .	167	Eye, mechanical lesion of the . . . . .	186
Costello on fistula . . . . .	457	Eye-ball, prominence of the . . . . .	197
Counter-irritants . . . . .	276	Eyes, Serre on inflammation of the . . . . .	180
Cranium, compound fracture of . . . . .	581		
Cranium, lardaceous cancer of the . . . . .	598	F.	
Creosote, tincture of . . . . .	565	Facial neuralgia, Dr. Allnatt on . . . . .	151
Creosote in encysted tumours . . . . .	618	False passages in the urethra . . . . .	129
Criminal jurisprudence, Sampson on . . . . .	79	Fermentative processes in living bodies . . . . .	163
Croup, laryngo-tracheotomy for . . . . .	87	Fever, remedies for . . . . .	2
Curvature of the spine . . . . .	515	Fever, morbid anatomy of . . . . .	246
Cyclopædia of surgery . . . . .	457	Fevers of India, Dr. Heyne on . . . . .	141
		Fine words in medicine . . . . .	268
D.		Fisher on tumours of the cauda equina . . . . .	7
Dawlish . . . . .	496	Fistula, urinary . . . . .	133
Deafness cured by morphia . . . . .	559	Fistula lachrymalis . . . . .	183
Death from high temperature . . . . .	139	Fistula lachrymalis, Rognetta on . . . . .	183
Death from hæmorrhage of the lungs . . . . .	287	Fistula in perineo . . . . .	446
Death of M. Double . . . . .	529	Fletcher's elements of pathology . . . . .	371
Death of the Duke of Orleans . . . . .	574	Fœtus, influence of air on the . . . . .	484
Decussation of the optic nerves . . . . .	20	Forry on the climate of the U. States . . . . .	135
Detection of sugar in the urine . . . . .	3	Fournet on pulmonary phthisis . . . . .	68
Devonshire, Shapter's climate of . . . . .	491	Foville on the brain . . . . .	1
Diabetes, Bell on . . . . .	520	Fracture, Macdonnell on . . . . .	457
Diabetes, with fatty matter . . . . .	522	Fracture, compound, of cranium . . . . .	581
Diarrhœa and dysentery . . . . .	136	France, vaccination in . . . . .	205
Diet in cases of severe wounds . . . . .	171	France's case of iridermia . . . . .	242
Diffuse cellular inflammation . . . . .	61	Free-trade in education and quackery . . . . .	619
Diffuse arachnitis . . . . .	60	Functions of the grey and white matter . . . . .	18
Digestion, Dumas' theory of . . . . .	164	Functions of the brain . . . . .	26
Disease, Gully's treatment of . . . . .	497	Functions of the spleen, Jackson on . . . . .	110
Diseases of the scalp, Erichsen on . . . . .	579		
Dissection wounds, pathology of . . . . .	60	G.	
Diver, accident to a . . . . .	633	Gall-bladder, case of distended . . . . .	243
Dorton chalybeate . . . . .	286	Gangrene, hospital . . . . .	175
Double, M. death of . . . . .	529	Gangrene produced by the starched bandage . . . . .	600
Downie on the springs of Homburg . . . . .	503	Gangrened limbs, amputation of . . . . .	174
Dropsy after scarlatina, iodine for . . . . .	274	Genital organs, affections of the, in children . . . . .	410
Druitt's surgeon's vade mecum . . . . .	520	Genito-urinary organs, Civile on, 116, 401	
Dumas on organic chemistry . . . . .	161, 534		

Germany, pharmacy in . . . . .	265	Infants, on the management of . . . . .	566
Gilbert on pulmonary consumption . . . . .	41	Infiltration of urine . . . . .	130
Glandulæ aggregate . . . . .	247	Infinity, sense of . . . . .	113
Glover's, Dr. case of tubarian gestation . . . . .	615	Inflammation of the eyes, M. Serre on, 182	
Gout, Weatherhead on . . . . .	509	Influence of constitution on surgical diseases . . . . .	177
Gout, hydropathic cure of . . . . .	509	Influence of external circumstances on wounds . . . . .	177
Great Britain, pharmacy in . . . . .	617	Infusion of chirayta . . . . .	265
Green on a new mode of amputation . . . . .	600	Injury of the head, cases of . . . . .	229
Gregory's Liebig's animal chemistry . . . . .	337	Injury of the intestine, Key's case of . . . . .	239
Gully's treatment of disease . . . . .	497	Insane, society for the relief of the . . . . .	336
Gunshot-wounds, treatment of . . . . .	171	Insanity, Prichard on . . . . .	522
Guy's hospital reports . . . . .	209	Internal pudic artery . . . . .	159
Guy's hospital museum, calculi in . . . . .	233	Intestine, injury of the . . . . .	239
H.			
Hæmaturia, case of . . . . .	212	Iodide of potassium in ophthalmic diseases . . . . .	612
Hæmaturia . . . . .	426	Iodine, effects of . . . . .	4
Hæmorrhage from lithotomy . . . . .	159	Iodine injections for hydrocele . . . . .	264
Hæmorrhage of the lungs, death from, . . . . .	287	Iodine for dropsy after scarlatina . . . . .	274
Hæmorrhages in children . . . . .	108	Irideremia, France on . . . . .	242
Hæmorrhoidal artery, inferior . . . . .	160	Iron, oxydes of, in poisoning by arsenic . . . . .	208
Hallucinations and illusions . . . . .	526	Iron, preparations of . . . . .	275
Hanwell lunatic asylum . . . . .	333	Iron, citrate and ammonio-citrate of . . . . .	621
Harrison on deformities of the spine . . . . .	515	Irregularity of the pudic artery . . . . .	159
Harrowgate water, artificial . . . . .	621	Irregularity of the artery of the bulb . . . . .	159
Hastings, Dr. Mackness on . . . . .	511	J.	
Head, cases of injury of the . . . . .	229	Jackson on epilepsy . . . . .	110
Head and face, malignant diseases of, . . . . .	604	Jackson on the funtions of the spleen . . . . .	110
Hearing, metastasis of . . . . .	557	K.	
Heart, motions and sounds of the . . . . .	2	Kennion on perforation of the stomach . . . . .	596
Heart, movements and sound of the, . . . . .	538	Key's case of injured intestine . . . . .	239
Hernia, strangulated—operation . . . . .	580	Kidney, Barlow on disease of the . . . . .	209
Hernia, strangulated ventral . . . . .	582	King on reparation of bone . . . . .	461
Herpes circinnatus . . . . .	389	Kingdon's case of disease of the appendix . . . . .	5
Heyne on hill fevers . . . . .	141	L.	
High temperature, death from . . . . .	139	Lardaceous cancer of the cranium . . . . .	597
Hill fevers, Dr. Heyne on . . . . .	141	Laryngo-tracheotomy for croup . . . . .	87
History of an epidemic meningitis . . . . .	541	Lateral curvature . . . . .	515
Homburg, Downie on the springs of . . . . .	503	Lawrence's medical report . . . . .	289
Hope, Dr. memoir of . . . . .	53	Lee on the education of mothers . . . . .	113
Hôpitaux des Enfants, clinique des . . . . .	465	Lees on hæmorrhage of the lungs . . . . .	287
Hospital gangrene . . . . .	175	Lees on hypertrophy of the brain . . . . .	608
Hôtel Dieu, surgical practice of the . . . . .	560	Leg, amputation of the . . . . .	600
Hughes on pulmonary phthisis . . . . .	238	Lesion of sensibility and motion . . . . .	586
Human races, extinction of . . . . .	259	Letter from Mr. Liddell . . . . .	633
Hydrocele, iodine injections for . . . . .	264	Lever on pelvic tumours obstructing parturition . . . . .	219
Hydropathic cure of gout . . . . .	509	Liddell, Mr. letter from . . . . .	633
Hydrops pericardii, diagnosis of . . . . .	3	Liebig's animal chemistry . . . . .	337
Hypertrophy of the brain, Lees on . . . . .	608	Life and mind . . . . .	16
Hysteria . . . . .	557	Ligature of ext. inguinal artery, &c. . . . .	579
I.			
Impetigo . . . . .	390	Light from living human subjects . . . . .	513
Incontinence of urine . . . . .	423, 450	Lithotomy, operation for . . . . .	158
India, diet in . . . . .	262	Lithotomy, hæmorrhage from . . . . .	159
Indian army, Mr. Martin's note on the, . . . . .	625	Lithotomy, remarks on . . . . .	172
Induration of the os uteri . . . . .	221	Lithotriety, Brodie on . . . . .	452
Infanticide, Taylor on . . . . .	214		
Infanticide, hydrostatic test for . . . . .	215		
Infanticide, Ploucquet's test for . . . . .	215		
Infants, purulent ophthalmia of . . . . .	188		

- Lithotrity, dangers of** . . . . . 455  
**Liver, calculi of the** . . . . . 12  
**Location of pulmonary phthisis** . . . . . 238  
**London, mortality tables of** . . . . . 277  
**Longet's vivisections** . . . . . 536  
**Loudon on population** . . . . . 501  
**Lumbar curvature** . . . . . 520  
**Lunatic asylum of Aberdeen** . . . . . 256  
**Lunatic asylum, Belfast** . . . . . 333  
**Lunatic asylum, Hanwell** . . . . . 333  
**Lungs, absolute weight of the** . . . . . 216  
**Lungs, diseases of the** . . . . . 493  
**Lungs, penetrating wound of both** . . . . . 614
- M.**
- Macdonnell on fracture** . . . . . 457  
**Mackness on Hastings** . . . . . 511  
**Madras Medical Journal** . . . . . 137  
**Malignant diseases of the uterus** . . . . . 225  
**Malignant diseases of the vagina** . . . . . 228  
**Malignant disease of the eye-ball** . . . . . 251  
**Malignant diseases of the head and face** . . . . . 604  
**Management of infants** . . . . . 566  
**Marsh on the evolution of light** . . . . . 513  
**Martin's Mr. note on the Indian army,** . . . . . 625  
**Mayo on the nervous system** . . . . . 16  
**Meath Infirmary** . . . . . 251  
**Mechanical lesions of the eye** . . . . . 186  
**Medical topography of Exeter** . . . . . 8  
**Medical Missionary Society in China,** . . . . . 149  
**Medical reform, Sir J. Clark on** . . . . . 153  
**Medical reform, Dr. Carmichael on** . . . . . 153  
**Medicine, fine words in** . . . . . 268  
**Memoir of Dr. Hope** . . . . . 53  
**Meningitis, history of an epidemic** . . . . . 541  
**Mesmero-phrenology** . . . . . 593  
**Metastasis of hearing** . . . . . 557  
**Michel, Baron, on typhoid fever** . . . . . 165  
**Military asylum, report from the** . . . . . 289  
**Milk, state of the, during pregnancy** . . . . . 549  
**Milk, on the qualities of the** . . . . . 550  
**Milk, formation of the** . . . . . 551  
**Milk, adulteration of the** . . . . . 552  
**Mind or matter** . . . . . 602  
**Missionary Society, medical, in China** . . . . . 149  
**Monomania** . . . . . 525  
**Monro's anatomy of the perineum** . . . . . 157  
**Montgomery on pregnancy** . . . . . 336  
**Moral insanity** . . . . . 523  
**Morbid anatomy of** . . . . . 246  
**Morphia, deafness cured by** . . . . . 559  
**Mortality tables of London** . . . . . 277  
**Mucous inflammations, oxalic acid for** . . . . . 564  
**Muscular sense** . . . . . 24  
**Myotomy in spinal deformities** . . . . . 179
- N.**
- Navy statistical reports** . . . . . 65  
**Neck of the bladder, diseases of the** . . . . . 401  
**Neck of the bladder, neuralgia of the** . . . . . 401  
**Neck, scrofulous ulcer of** . . . . . 583
- Nervous palpitation, diagnosis of** . . . . . 3  
**Nervous system, Mayo on the** . . . . . 16  
**Nervous system, composition of the** . . . . . 17  
**Neuralgia, facial, Dr. Alnatt on** . . . . . 151  
**Neuralgia of the neck of the bladder** . . . . . 401  
**New-York Hospital** . . . . . 252  
**Nitrate of silver, discolouration by** . . . . . 610  
**Nose, operation for obliquity of the** . . . . . 201  
**Nunneley on erysipelas** . . . . . 59
- O.**
- Obliquity of the nose, operation for** . . . . . 201  
**Obstructions of the urethra, from in-**  
**jury** . . . . . 447  
**Ocular myotomy** . . . . . 195  
**Opacities of the cornea** . . . . . 190  
**Operation for cataract, Serre on the** . . . . . 180  
**Operations en deux temps** . . . . . 171  
**Operations, mortality of** . . . . . 250  
**Operations, statistics of** . . . . . 588  
**Ophthalmia in China** . . . . . 149  
**Ophthalmia, purulent** . . . . . 187  
**Ophthalmia, scrofulous** . . . . . 188  
**Ophthalmia, syphilitic** . . . . . 188  
**Ophthalmia, occasional forms of** . . . . . 190  
**Ophthalmic diseases, iodide of potas. in** . . . . . 612  
**Ophthalmological literature** . . . . . 183  
**Optic nerves, decussation of the** . . . . . 20  
**Optic nerve, rupture of the** . . . . . 184  
**Orbit, wound of the** . . . . . 184  
**Orfila on the blood** . . . . . 565  
**Organic chemistry, Dumas on** . . . . . 161, 534  
**Organic chemistry, Liebig's** . . . . . 337  
**Orleans, death of the Duke of** . . . . . 574  
**Os uteri, induration of the** . . . . . 221  
**Os uteri, prolongation of the** . . . . . 223  
**Oxalic acid for mucous inflammations** . . . . . 564  
**Ox-gall, Dr. Clay on** . . . . . 278  
**Oxydes of iron as counter-poisons to**  
**arsenic** . . . . . 208
- P.**
- Pancreas, scirrhus of the** . . . . . 274  
**Paralysis, sympathetic** . . . . . 331  
**Parturition, pelvic tumours obstructing** . . . . . 219  
**Pathology, Fletcher's elements of** . . . . . 571  
**Patients, kindness towards** . . . . . 178  
**Perception, laws of** . . . . . 36  
**Pelvic tumours obstructing parturition** . . . . . 219  
**Perforation of the stomach** . . . . . 596  
**Perineum, Monro's anatomy of the** . . . . . 157  
**Peritonitis family disposition to** . . . . . 12  
**Pharmacy in Germany** . . . . . 265  
**Pharmacy in Great Britain** . . . . . 617  
**Phthisis, prevention of** . . . . . 51  
**Phthisis, Fournet on** . . . . . 68  
**Phthisis, hereditary transmission of** . . . . . 71  
**Phthisis, diagnostic signs of** . . . . . 75  
**Phthisis, pulmonalis, on the location of** . . . . . 238  
**Phthisis, bronchial ganglionic** . . . . . 466  
**Phthisis, influence of tobacco on** . . . . . 541

# INDEX.

V

Phthisis, Rayer on . . . . .	562	S.	
Physic in China . . . . .	262	Sampson on criminal jurisprudence . . . . .	79
Physiological maxims . . . . .	568	Sanguineous tumours . . . . .	228
Physiology of plants . . . . .	534	Scalp, Erichsen on diseases of the . . . . .	379
Pin in the appendix, case of . . . . .	5	Scarlatina encephalica . . . . .	2
Pitting in small-pox, application for . . . . .	3	Scarlatina, Bright's disease after . . . . .	91
Pityriasis . . . . .	397	Scarlatina, secondary deposits . . . . .	249
Plants, action of, on carbonic acid . . . . .	163	Scarlet fever . . . . .	10
Pleurisy in children . . . . .	91	Science, unity of . . . . .	175
Pleurisy, causes of . . . . .	94	Scirrhus of the pancreas . . . . .	274
Pleurisy, symptoms of . . . . .	96	Scrivener's spasm . . . . .	264
Pleurisy, treatment of . . . . .	102	Scrofulous ophthalmia . . . . .	188
Ploucquet's test in infanticide . . . . .	215	Scrophulous ulcer of the neck . . . . .	583
Polypous tumours, nasal . . . . .	252	Sedillot on surgical instruction . . . . .	175
Poor-law medical relief . . . . .	269	Sensation, laws of . . . . .	17
Population, London on . . . . .	501	Sensibility and motion, lesion of . . . . .	586
Pregnancy, urine a test of . . . . .	4	Serre on the operation for cataract . . . . .	180
Pregnancy and delivery, relations between . . . . .	476	Serre on inflammation of the eyes . . . . .	182
Pregnancy, state of the Milk during . . . . .	549	Sesquicarb. of iron in traum. tetanus . . . . .	618
Pregnant women, diseases of . . . . .	476	Severe wounds, diet in . . . . .	171
Pregnant women, regimen of . . . . .	486	Shapter's climate of Devonshire . . . . .	491
Preparations of iron . . . . .	275	Skin, discoloration of, by nit. of silver . . . . .	610
Prichard on insanity . . . . .	522	Skull, aneurysms within the . . . . .	577
Prostate, diseases of the . . . . .	412	Small-pox, application for pitting in . . . . .	3
Prostate, enlarged . . . . .	412	Soden on benzoic acid in urinary disorders . . . . .	601
Prostate, suppuration of the . . . . .	416	Sounding for stone . . . . .	158
Prostate, atrophy of the . . . . .	416	Sounds of the heart . . . . .	538
Prostatic artery . . . . .	160	Spasm of the thumb, Stromeyer on . . . . .	201
Prostatic veins . . . . .	160	Spermatic cord, affections of the . . . . .	134
Prostatic calculi . . . . .	417	Spinal deformities, myotomy in . . . . .	179
Provincial Association, transactions of . . . . .	1	Spinal curvature, pathology of . . . . .	516
Ptoxis . . . . .	185	Spinal curvature, treatment of . . . . .	518
Pudic artery, irregularity of the . . . . .	159	Spine, Harrison on deformities of the . . . . .	515
Pulmonary artery, aneurysm of the . . . . .	3	Spine, secondary curvatures of the . . . . .	517
Pulmonary consumption, Gilbert on . . . . .	41	Spleen, Jackson on the functions of . . . . .	110
Pulmonary diseases in the United States . . . . .	135	Squamous diseases of the scalp . . . . .	397
Purulent ophthalmia of armies . . . . .	187	Stammering, surgical treatment of . . . . .	198
Purulent ophthalmia of infants . . . . .	188	Stammering, operation for . . . . .	561
Pustular diseases of the scalp . . . . .	396	Staphyloma . . . . .	191
R.		Starched bandage, gangrene from the . . . . .	600
Rashness of modern surgeons . . . . .	170	Statistics of consumption . . . . .	41
Rayer on phthisis . . . . .	562	Statistics of the navy . . . . .	65
Reflex action . . . . .	21	Statistics of operations . . . . .	588
Reform, medical, Sir J. Clark on . . . . .	153	Stomach, perforation of the . . . . .	596
Reform, medical, Dr. Carmichael on . . . . .	153	Stone, sounding for . . . . .	158
Regimen of pregnant women . . . . .	486	Storr's case of hæmorrhage from an abscess . . . . .	597
Reparation of bone, King on . . . . .	461	Strabismus . . . . .	194
Respiration and animal heat . . . . .	163	Streeten's retrospective address . . . . .	1
Respiration, theory of . . . . .	369	Streeten's topography of Exeter . . . . .	8
Retention, spasmodic, treatment of . . . . .	440	Stricture of the urethra . . . . .	118
Retrospective address, Dr. Streeten's . . . . .	1	Stricture, organic lesions from . . . . .	118
Re-vaccination . . . . .	11	Stricture, seat of . . . . .	120
Rognetta on fistula lachrymalis . . . . .	183	Stricture, diagnosis of . . . . .	120
Roux, practice of . . . . .	560	Stricture, treatment of . . . . .	122
Roux, M. clinical practice . . . . .	584	Stricture, on the use of caustic in . . . . .	124
Royal George, wreck of the . . . . .	633	Stricture at the orifice of the urethra . . . . .	126
Rupture of the optic nerve . . . . .	184	Stricture in corpus spongiosum . . . . .	126
		Stricture of the membranous portion . . . . .	127
		Stricture, relapse of . . . . .	128

